Reel Rain Traveler Irrigation
C1400, C2000, & C3000
MAN126

2nd Edition, S/N 500800

AMADAS

Read this manual before using this product. Failure to follow the instructions and safety precautions in this manual can result in serious injury or death.

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Reel Rain Traveler Irrigation Series C1400, C2000, and C3000 are manufactured by Amadas Industries:

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AMADAS

Welcome To AMADAS Industries

With origins dating back to 1963, Amadas Industries and its predecessors have a long history of providing high quality, reliable, and innovative equipment for the farming industry. Amadas equipment is currently at work throughout the United States and in many other countries. This equipment ranges from the Magnum Fource Peanut Combine, Tree Bark Processing and Packaging Machinery, Hi-Speed Cotton Stalk Puller/Chopper to the Reel Rain Traveler Irrigation Systems.

Reel Rain Traveler Irrigation Series C1400, C2000, & C3000





NOTE! *The C1400, C2000, and C3000 Reel Rains and their various options are used interchangeably in the photographs in this manual. Generally, your machine will look like the item pictured; however, you may sometimes have a different model or option and may notice some differences in appearance. Please note that your machine functions as described by the text, even if your irrigator is not an exact match to the photo shown.*

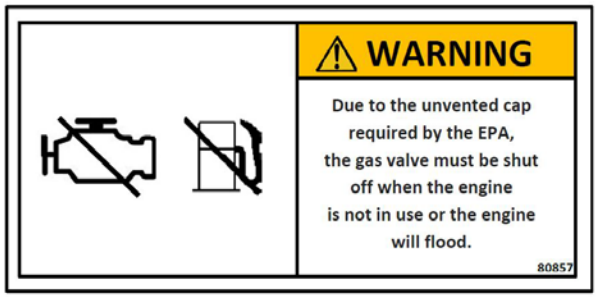
Congratulations on your purchase of a Reel Rain Irrigator! We're proud of our Reel Rain and the design and workmanship that go into every AMADAS machine.

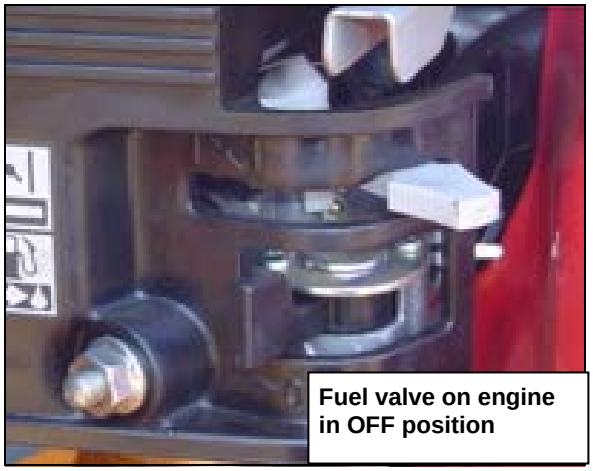
Irrigation equipment is important to good farm management. Water applied at the right times and in the correct amounts can result in increased yields. An efficient irrigation system such as the Reel Rain adds a measure of insurance to your operation.

The AMADAS Reel Rain Traveler Irrigation Series offers one of the most efficient and flexible methods of irrigation. Reel Rain irrigators can handle fields of almost any shape or size and are easy to transport from field to field.

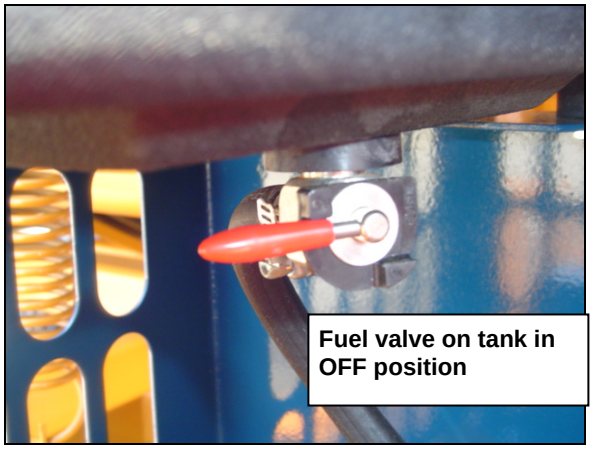
The gas engine driven Reel Rain irrigator is the most popular piece of equipment for slurry and wastewater disposal. With its easy setup and operation, a Reel Rain irrigator disposes of slurry and wastewater quickly and efficiently. The turbine drive is a low maintenance alternative for clear water applications.

IMPORTANT USAGE NOTICE FOR ENGINE POWERED IRRIGATORS!! Due to EPA regulations, the gas tank cap is not vented, which can create a problem with engine flooding especially on hot days. To avoid this issue, always make sure the gas valve on either the engine or the tank (or both) is shut off when the engine is not in use.





Fuel valve on engine in OFF position



Fuel valve on tank in OFF position

Benefits

The Reel Rain Traveler Irrigation System offers the following benefits:

- **Performance under the toughest conditions.**

  With flow rates of up to 770 gallons per minute, a Reel Rain irrigator can irrigate up to 1.7 acres per hour, applying one inch of water. A specially designed chassis and drive train guarantee long life, high reliability, and maximum versatility.

- **One of the most efficient and flexible methods of irrigation.**

  In terms of time and labor, the Reel Rain offers one of the most efficient and flexible methods of irrigation with quick setup and minimal maintenance. A large diameter turntable simplifies reel positioning while an enlarged opening between the turntable and reel allows greater rewind flexibility. Reel Rain irrigators are easy to transport, allowing you to irrigate different sizes and shapes of fields at different locations.

- **Standard digital speed readout.**

  Digital speed readout allows you to determine hose retrieval speed easily and quickly. The digital readout consists of a magnetic pickup, sprocket, and display unit. The digital speed readout is activated whenever the machine is in operation. Hose speed is displayed on the readout to the nearest 1/10 FPM. The readout displays actual retrieval speed on the innermost layer. You can determine the actual speed of hose retrieval on other layers by using the conversion chart on the machine.

- **Standard digital tachometer on engine driven units.**

  Standard digital tachometers are supplied on all engine driven units. The engine speed in RPM is displayed whenever the engine is running. When the engine is not running, the total number of hours of operation is displayed. A chart is provided on the machine to help you convert engine RPM to hose speed on the inner layer.

- **Automatic speed compensation.**

  Each Reel Rain irrigator is equipped with an automatic speed compensation sensor that measures the depth of the hose on the reel and adjusts the speed as the reel becomes filled. This allows the hose retrieval speed to be maintained within five percent of the original setting, which provides a more uniform application of water over the entire path of the gun cart.

- **Cost effective solution to slurry problems.**

  AMADAS Reel Rain Traveler Irrigators offer cost effective solutions to the slurry disposal problems faced by municipalities as well as hog and dairy operations.

  Galvanized inlet fittings and a galvanized gun cart make the AMADAS Reel Rain the prime choice for slurry and agricultural applications. When combined with a chopper pump, the Reel Rain can process slurry with a solids content of up to 7%. The C1400/C2000/C3000 Reel Rain is available with either a 4" or 4 ½" (inside diameter) hose.

- **Available with two gun carts.**

  Two gun carts are available, the M40G and MH50.

  The M40G operates with up to three guns. It has a ground clearance of less than six inches and is recommended for orchards, turf, or pasture. The M40G is also well suited to pumping waste water and slurry with its low profile and stability, which reduce wind drift and aid in odor control.



M40G

  The MH50 is a high clearance, galvanized gun cart designed for general irrigation use. This cart is equipped with high flotation tires and comes with tubes in the tires suitable for fluid weight addition.



MH50B

Optional Features

The Reel Rain C1400, C2000, and C3000 feature a variety of options:

- Air Purge Kit. The air purge kit is used to blow water out of the irrigator. It hooks up to the gun cart and uses a "pig" and compressed air to push water out of the Reel Rain.

- Hydraulic Stabilizer Legs, Gun Cart Lift, and Turntable. Stabilizer legs are lowered and raised using your tractor's hydraulics. This option also uses the tractor's hydraulics to rotate the turntable and raise the gun cart. Note that the hydraulic turntable is not available for the C1400.



Hydraulic Stabilizer Legs and Turntable

- Crankdown Stabilizer Legs. Stabilizer legs are easily cranked down and planted into the ground to provide support for the Reel Rain.



Crankdown Stabilizer Legs

- Throwdown Stabilizer Legs. (Available for C1400 and C2000 models only.) Stabilizer legs are unpinned and thrown into the ground, providing secure support for the Reel Rain.



Throwdown Stabilizer Legs

NOTE! The Auxiliary Axle and Extension Kits below are not available for the C1400.

- Auxiliary Axle Kit. Depending on your requirements, an auxiliary axle can be added to the Reel Rain to provide additional flotation and stability. This third axle also reduces the weight carried by the pulling vehicle.

- Auxiliary Axle Extension Kit. This kit moves the auxiliary axle out so that a booster pump can be mounted.

- Two gun choices available. You can select either the Nelson Big Gun SR200 or the Komet Twin 202/Plus for your Reel Rain. Both guns are high performance, maintenance free, and come with a variety of nozzle sizes.



Nelson Gun



Komet Gun

Performance Data

Model Number	Hose Length	Hose I.D. (Inches)	Typical Lane Spacing (Feet)	No. of Acres covered in One Pull	Flow Rate (G.P.M.) 150 PSI Input		Time for One Pull, Applying 1" of Water (hrs)		Nelson Gun SR200	Komet Gun Twin 202/Plus
					Turbine	Gas	Turbine	Gas		
3450L 3450 3400	1400 1300 1500	4.5 4.5 4.0	310 320 300	10.83 10.47 11.14	550 615 425	600 675 465	8.9 7.7 11.9	8.2 7.0 10.8	80PSI 80PSI 80PSI	80PSI 80PSI 80PSI
2450 2400	1050 1250	4.5 4.1	330 320	8.94 10.11	670 470	770 540	6.0 9.7	5.3 8.5	80PSI 80PSI	80PSI 80PSI
1450 1400	1050 1250	4.5 4.1	330 320	8.94 10.11	670 470	770 540	6.0 9.7	5.3 8.5	80PSI 80PSI	80PSI 80PSI

Dimensions (approximate)

Model Number	Length	Width	Height	Weight without water	Weight with water
C1400	21 ft	10 ft 7 in	12 ft 8 in	11,600 lbs	18,760 lbs
C2000	20 ft 8 in	9 ft 10 in	12 ft 11 in	11,600 lbs	18,760 lbs
C3000	21 ft	10' 2 in	12 ft 11 in	13,420 lbs	21,540 lbs


Reel Rain II
20 ft
8 in
21 ft


Reel Rain II
AMADAS
2000
20 ft
8 in
20 ft 8 in


Reel Rain II
AMADAS
3000
20 ft
8 in
21 ft

NOTES

1. Safety

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This symbol means:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

Safety at All Times!

You, the operator, can help avoid accidents or injury by observing the precautions in this section and insisting that others working for or with you also follow them.

- Do NOT attempt to operate this equipment under the influence of drugs or alcohol, or prescription/over-the-counter drugs that may cause impairment.
- This equipment is dangerous to children and persons unfamiliar with its operation. They should never be allowed to operate this machinery or remain in its vicinity while in operation.
- Only a trained operator familiar with this machinery and trained in its operation should be allowed to operate this machine. Do NOT allow any person to operate or perform maintenance on this machine until he or she has read this manual and understands the safety precautions.
- To prevent injury or death, use a tractor equipped with a Rollover Protective System (ROPS).
- NEVER exceed the limits of a piece of machinery. If its ability to perform a job safely is in question, DO NOT TRY TO DO THAT JOB.

Shields

- Certain photographs or illustrations in this manual may show a safety shield removed. However, NEVER operate this machine without all shields correctly in place!
- If a shield must be removed to make a repair or adjustment, replace the shield prior to use.

Safety Decals

- Replace any CAUTION, WARNING, DANGER, or instruction safety decal that is not readable or is missing.
- Do NOT paint over, remove, or deface any safety sign or warning decals.

Look for the Safety Alert Symbol!



The Safety Alert Symbol indicates a potential safety hazard to personnel and that extra precaution must be taken. When you see this symbol on the machine, remain alert and carefully read the message that follows it. ALWAYS follow the recommended precautions and safe operating procedures accompanying this symbol. If you have any questions, please contact your dealer or the manufacturer.

Safety Signal Words Used

Three safety signal words are used on the machine and in this manual to indicate the degree or level of hazard seriousness. These three words are:

⚠DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

⚠WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

⚠CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE! This section covers general safety. Some items may not apply to this type of machine.

Safety Practices

Transport Machine Safely

- Comply with state and local laws.
- Be familiar with tractor operations and follow all safety instructions in the tractor's manual.
- Before moving away, always check immediate vicinity (e.g., for children).
- NEVER exceed a maximum speed of 20 MPH.
- Always adapt ground speed to road or field conditions, making sure you have adequate control of steering and stopping.
- Avoid sharp turns, holes, ditches, and obstructions which may cause the tractor to tip, particularly on hillsides.
- Use following tow load weight ratios as guidelines:

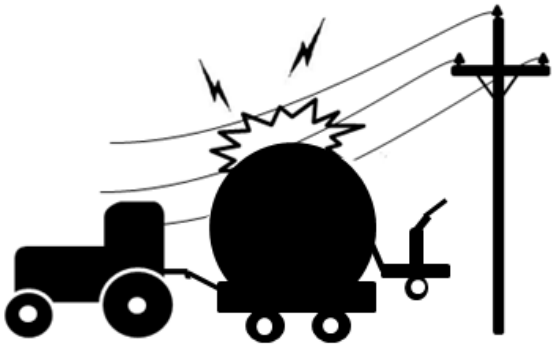
  20 MPH when weight is less than or equal to the weight of the tractor

  10 MPH when weight is more than weight of the tractor
- NEVER tow a load more than double the weight of the tractor!
- Sudden braking can cause a towed load to swerve and upset. Reduce speed if towed load is not equipped with brakes.



Avoid Electrical Power Lines

- Make sure all components are secured in the proper position before transporting machine (for example: basket bin lip extension, mower deck, off-loading conveyor, etc.).
- AVOID all lines, particularly low-hanging electrical cables, during transport.



⚠DANGER

Contact with electrical lines will cause the operator to suffer severe electrical shock or possibly death.

Use a Safety Chain

- Use a safety chain to help control machinery if it separates from the tractor drawbar.
- Use a chain with strength rating equal to greater than the gross weight of the towed machine.
- Attach the chain to the tractor drawbar support, allowing only enough slack in the chain for turning.
- Do NOT use a safety chain for towing.



NOTE! This section covers general safety. Some items may not apply to this type of machine.

Avoid High Pressure Fluids

⚠ CAUTION





- Use extreme care when working with hydraulic components and high pressure sprays.
- Escaping fluid or spray under pressure can penetrate the skin, causing serious injury.
- To avoid injury, relieve pressure before disconnecting hydraulic or other lines.
- Tighten all connections before applying hydraulic or spray pressure.
- Search hoses/connections for leaks with a piece of cardboard.
- Take appropriate safety measures to protect hands, body, and face from high pressure fluids.
- ALWAYS wear appropriate safety gear to protect hands, body and face from exposure to high pressure fluids.
- NEVER try to block the flow or search for leaks of high pressure fluids with your hands even if wearing gloves. High pressure fluids can penetrate gloves as well as your skin.
- ALWAYS avoid direct contact of any high pressure fluid low.
- If an accident occurs, respond as follows:
  - o Seek medical treatment immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.
  - o Alert the medical professionals that a fluid injection or high pressure spray injury has occurred.
  - o Give information on the type of fluid or spray and time the accident occurred. If known, include the amount of fluid injected and/or the system injection pressure.
  - o Surgery will most likely be required, so no food or drink for the affected person.

Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

VERY IMPORTANT!! Although in some cases there is little or no pain from an injection or high pressure spray accident, THIS IS A SERIOUS EVENT THAT MUST BE TREATED BY MEDICAL PROFESSIONALS!!!

NOTE! This section covers general safety. Some items may not apply to this type of machine.

Work in Ventilated Area

Engine exhaust fumes can cause sickness or death.

- If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.
- If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

AMADAS DOES NOT RECOMMEND RUNNING ANY ENGINE IN AN ENLCOSED AREA EVEN WITH VENTILATION.



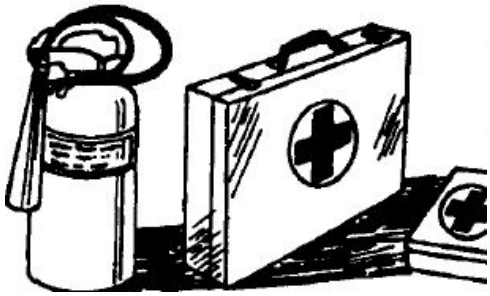
Handle Fuel Safety – Avoid Fires

- Handle fuel with care; it is highly flammable.
- Do NOT refuel the machine while smoking or when near open flame or sparks.
- ALWAYS stop engine before refueling machine.
- Fill fuel tank outdoors.
- Prevent fires by keeping machine clean of accumulated trash, grease, and debris.
- ALWAYS clean up spilled fuel.



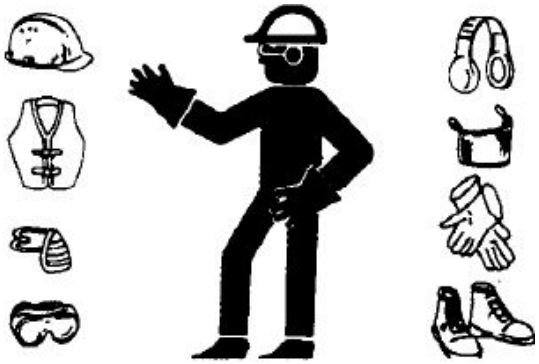
Prepare for Emergencies

- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



Wear Protective Clothing

- Wear close-fitting clothing and safety equipment appropriate to the job.
- Operating equipment safely requires the full attention of the operator. Do NOT wear radio or music headphones while operating machine.



NOTE! This section covers general safety. Some items may not apply to this type of machine.

Handle Chemical Products Safely

- Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with AMADAS equipment include such items as lubricants, coolants, paints, and adhesives.
- Before you start any job using a hazardous chemical, check the MSDS so that you are aware of the risks and know how to proceed safely. Carefully follow all procedures, using only recommended equipment.
- See your AMADAS dealer for MSDS on chemical products used with AMADAS equipment.



Avoid Contact with Moving Parts

- Wear close-fitting clothing to avoid entanglement with moving parts.
- Keep hands, feet, and clothing away from power-driven parts.
- NEVER clean, lubricate or adjust machine when it is running.



Remove Accumulated Crop Debris

- The buildup of chaff and crop debris near moving parts or heat sources is a hazard.
- Check and clean these areas frequently.
- Before performing any inspection or service, engage parking brake, turn off engine, and remove key.

Practice Safe Maintenance

- Understand the service procedure before doing work. Use proper tools and refer to the User Manual.
- Keep service area clean and dry.
- Lower machine to ground, engage parking brake, turn off engine, and remove key before performing maintenance.
- Allow time for the machine to cool completely.
- NEVER lubricate, service, or adjust machine while it is moving.
- Keep hands, feet, and clothing from power-driven parts.
- Securely support any machine elements that must be raised for service work.
- Keep all parts in good condition and properly installed.
- Fix any damage immediately; replace worn or broken parts.
- Keep the machine free of any buildup of grease, oil, or debris.



NOTE! This section covers general safety. Some items may not apply to this type of machine.

Remove Paint/Protective Coating Before Welding Or Heating

- Avoid potentially toxic fumes and dust.
- Hazardous fumes can be generated when paint or coatings are heated by welding, soldering, or by using a torch.
- Do all work outside or in a well-ventilated area.
- Remove paint/coatings before welding or heating:
  - o If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
  - o If you use solvent or paint stripper, remove stripper with soap and water before welding.
  - o Remove solvent or paint stripper containers and other flammable material from the area.
  - o Allow any fumes to disperse for at least 15 minutes before welding or heating.
- Do NOT use a chlorinated solvent in areas where welding will take place.
- Do all work in an area that is well-ventilated to carry toxic fumes and dust away.
- Dispose of paint/coatings and solvent properly.



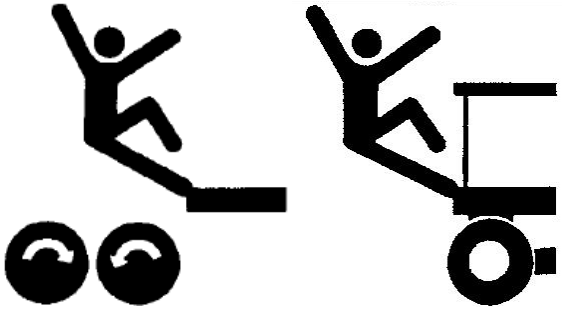
Avoid Using Heat Near Pressurized Fluid Lines

- Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders.
- Do NOT heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.



Keep Riders off of Machine

- Only allow the operator on the machine. Riders obstruct the operator's view, which results in the machine being operated in an unsafe manner.
- Riders are subject to injury such as being thrown off of the machine.
- Children should NEVER be allowed on the machine.

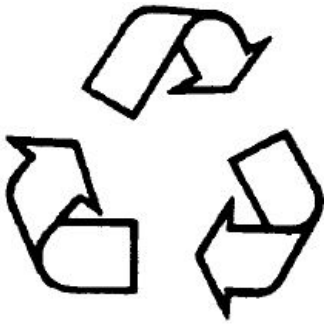


NOTE! This section covers general safety. Some items may not apply to this type of machine.

Dispose Of Waste Properly

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste includes items such as oil, fuel, coolant, brake fluid, filters, and batteries.

- Use leak-proof containers when draining fluids.
- Do NOT use food or beverage containers that may mislead someone into drinking from them.
- Do NOT pour waste onto the ground, down a drain or into a water source.
- Inquire about the proper way to recycle or dispose of waste from your local environmental or recycling center, FEMA, or from your AMADAS dealer.



Support Machine Properly

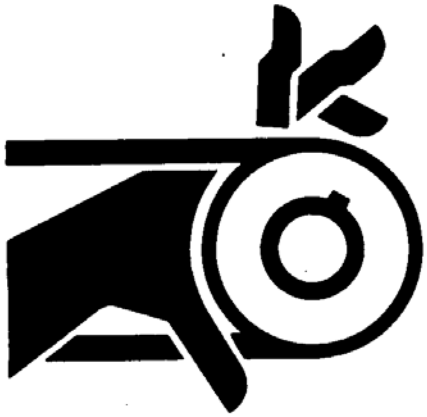
- ALWAYS lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.
- Do NOT support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load.
- Do NOT work under a machine that is supported solely by a jack.
- Follow all safety procedures in this manual for supporting the machine.
- When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.



Service Drive Belts Safely

When servicing drive belts, always observe these precautions:

- Avoid serious injury from hand or arm entanglement. Never attempt to clean, check, or adjust belts while the machine is running. Always shut off the engine, set the parking brake and remove the key.
- Do NOT attempt to clean belts with flammable cleaning solvents.



NOTE! This section covers general safety. Some items may not apply to this type of machine.

Service Tires Safely

Explosive separation of a tire and rim parts can cause serious injury or death.

- Do NOT attempt to mount a tire unless you have the proper equipment and experience to perform the job.
- Always maintain the correct tire pressure.
- Do NOT inflate the tires above the recommended pressure.
- NEVER weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.
- When inflating the tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of over the tire assembly. Use a safety cage if available.
- Check wheels for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts. NEVER fill a damaged tire or one that is missing lug bolts or nuts.



Pay Close Attention to Notes

- Throughout the manual, information that needs to be emphasized is set apart with either a "NOTE!" or "IMPORTANT!" heading.
- Please be sure to carefully read this information, as it usually indicates a situation that could cause machine damage.



Maintain Your Machine

- It is crucial you maintain your machine in proper working condition.
- Perform all scheduled maintenance and repairs in a timely manner.
- Do NOT perform unauthorized modifications to the machine as these could impair the function and/or safety of the machine and affect machine life.

Use Safety Lights and Devices

Slow moving tractors, self-propelled equipment and towed implements or attachments can create hazards when driven on public roads. They are difficult to see, especially at night.

- Whenever you drive on public roads, use flashing lights and turn signals according to local regulations.
- To increase visibility, use the lights and devices provided with your machine.
- Keep safety items in good condition.
- Replace missing or damaged items.



Additional Safety for this Machine

Pressurize Machine Safely

- Do NOT stand near the high pressure lines while pressurizing the system.
- Do NOT operate the machine with an inlet pressure exceeding 150 PSI.



Transport Irrigator Safely

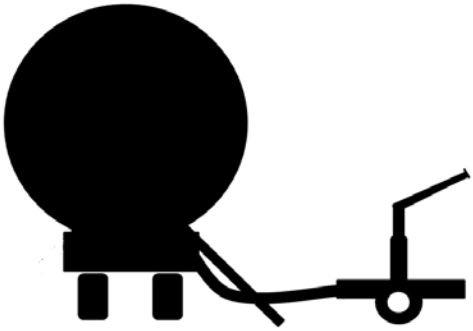
- ALWAYS hook the loose end of each gun lift chain into the opening from which the chain is hung.
- Do NOT tow in excess of 20 MPH when empty or 10 MPH when hoses are full of water.
- ALWAYS rotate turntable to travel position and lock before transporting machine.



- Make sure the machine is level when towing.
- ALWAYS drain and remove as much water as possible before transporting the machine.

Operate Irrigator Safely

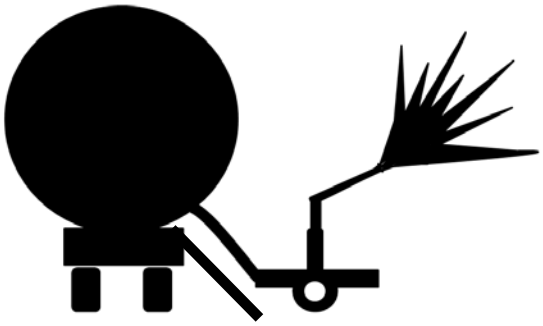
- Periodically check all nuts and bolts for tightness.
- Make sure everyone is clear of the machine before and during operation.
- Lower the stabilizer legs and jack before towing out the hose.



- ALWAYS make sure stabilizer legs are firmly imbedded in ground before operating the machine.

Operate Gun Safely

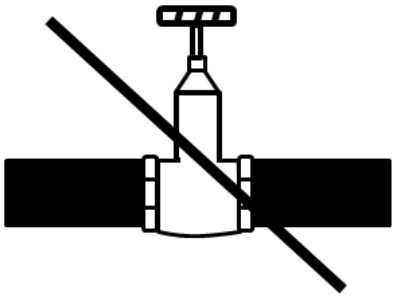
- Do NOT stand or allow anyone else to stand between the machine and the gun cart.
- Stand clear of the gun while in operation.
- NEVER stand in front of the gun during operation. The high velocity water exiting the gun can cause injury.



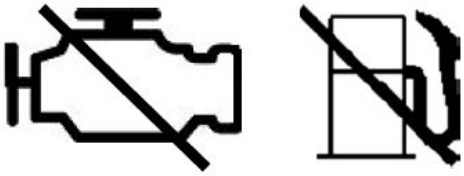
- ALWAYS make sure there is no water pressure in the system before changing gun nozzles.

Practice Irrigator Maintenance Safety

- ALWAYS engage the reel brake before attempting any maintenance or adjustments.
- For turbine reel rains, make sure the reel rain is disconnected from the inlet water source before performing maintenance.



- For gas engine reel rains, make sure the fuel valve under the tank and on the engine are shut off before performing maintenance.



Safety Decals

Safety decals identify specific hazards, as well as general safety. A signal word (⚠DANGER, ⚠WARNING, or ⚠CAUTION) is included on each decal to alert you to the severity of the hazard.

Please note the following about the decals:

- Keep them clean and legible.
- Never remove a safety decal from the machine.
- When you replace a part with a safety decal, also replace that decal.
- For replacement decals, call your AMADAS dealer.
- Replacement safety decals are available free of charge.

Safety decals used on this machine are shown on the following pages. Decal locations are also included.

Decals

DANGER

ENTANGLEMENT HAZARD
MISSING SHIELD OR GUARD

To avoid serious injury or death:

- DO NOT OPERATE THIS MACHINE. If this sign is visible, a shield or guard is missing.

80933

DANGER

MOVING PARTS HAZARD

To prevent serious injury or death when performing maintenance on this machine:

- Put the tractor in park.
- Shut off the engine.
- Remove the key.

80934

CAUTION

Do not operate this machine until you have read and understood the operator's manual. If you do not have a copy of the manual, contact your AMADAS dealer.

Manuals are available for printing at:

www.amadas.com

80935

DANGER



ENTANGLEMENT HAZARD

To avoid serious injury or death:

- Operate this machine only when all shields and guards are securely in place.

80941

DANGER



CRUSH HAZARD

PINCH POINT

To prevent severe injury or death:

- Avoid area when machine is in operation.

80948

DANGER



BODY ENTANGLEMENT HAZARD

ROTATING DRIVELINE

To prevent severe injury or death:

- Avoid all contact with PTO shaft while shaft is in motion.

80949

WARNING

TO AVOID SERIOUS INJURY OR DEATH, OR MACHINE DAMAGE:

1. Place turntable in locked position before operating or towing.
2. Secure all shields in place.
3. Check and tighten all wheel lugs.
4. Fasten all disconnects securely before applying water pressure (maximum pressure 150 PSI).
5. Make sure stabilizer and jack are in place before towing out hose.
6. Maintain proper towing speed (maximum speed 20 MPH).

80951

DANGER

HIGH PRESSURE WATER HAZARD

To prevent severe injury or death:

- Do not exceed 150 PSI maximum rated pressure limit for this machine.

80952

NOTICE

TO PREVENT MACHINE DAMAGE:

- **Brake band tension has been set by the manufacturer. Check periodically and re-adjust as needed.**

80971

NOTICE

TO PREVENT MACHINE DAMAGE:

- **Drain turbine to prevent water from freezing.**

80937

⚠WARNING



HIGH PRESSURE WATER HAZARD

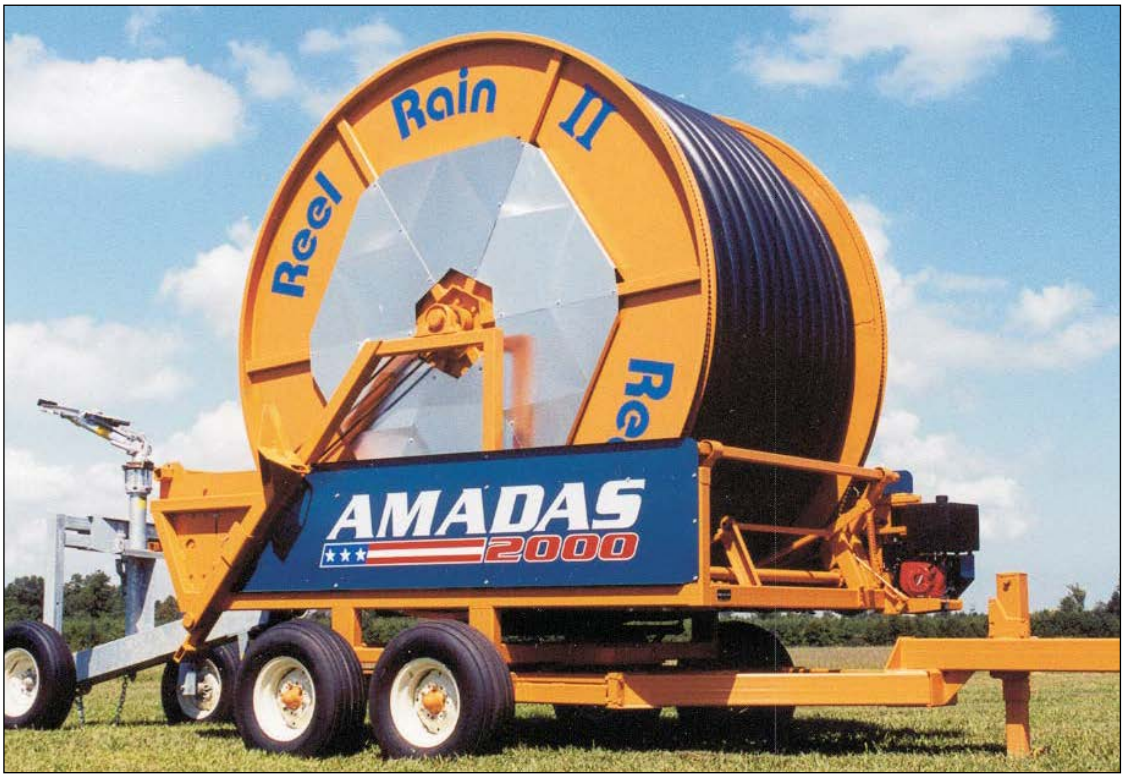
To prevent serious injury or machine damage when changing belt:

- **Disconnect water source.**
- **Disengage main drive.**

80944

Decal Locations





2. Preparation

Dealer Preparation 18
Unload and Assemble 19
Install Hydraulic Hoses 21
Track Gun Cart 22
Hook Up the Gun Cart 23
Attach the Gun 27
User Preparation 28
Post Delivery Inspection 28
Lubrication 29
Adjust Gun Cart Width 30
Inspection Checklist 31

Dealer Preparation

This section provides information for preparing the Reel Rain Traveler Irrigation System for delivery to the user.

The amount of preparation required depends on the following:

- If your dealership receives the Reel Rain on a truck, it needs to be unloaded as described on the following pages. The Reel Rain must be assembled prior to delivery to your customer and, unless your dealership has a very large forklift, must be partially assembled during the unloading operation.
- If the Reel Rain is equipped with hydraulics, the hydraulic hoses need to be attached before the Reel Rain is delivered.
- If the Reel Rain is equipped with a manual assist turntable, it needs to be installed before the Reel Rain is delivered.

In addition, the gun cart must be tracked to make sure that it rolls in a straight line. The gun cart then needs to be attached to the hose and the gun bolted to the cart.



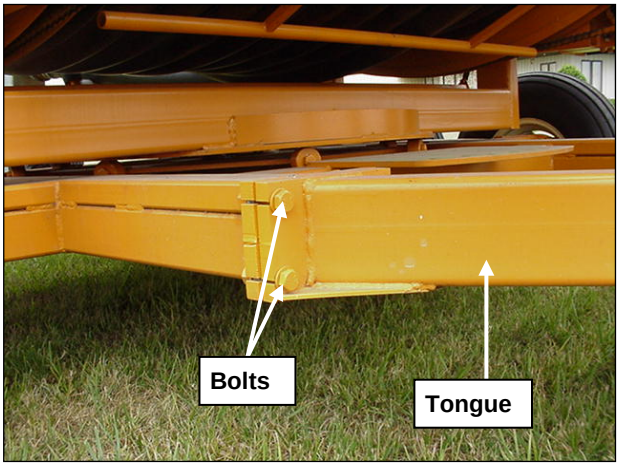
Reel Rain C3000



Reel Rain C2000

Unload and Assemble

1. Bolt the tongue to the front of the machine and torque to 200 ft. lbs.



2. Using a tractor or forklift, pull the machine forward until the rear axle is sitting on the edge of the truck and the front axle is off of the truck.

3. Bolt the spindles onto the front axle.



4. Torque the ¾" bolts to 200 ft/lb.

5. Bolt the wheel and tire assemblies onto the front hubs.



6. Pull the machine forward until the back edge of the machine is several inches from the edge of the trailer.

7. Bolt the spindles onto the back axle.

8. Torque the ¾ "bolts to 200 ft/lbs.

9. Bolt the wheel and tire assemblies onto the rear hubs.

10. Torque the lug nuts and inflate the tires as follows:

C2000/C3000

Lug nuts:	125 ft/lbs
Tires:	90 PSI

C1400

Lug nuts:	200 ft/lbs
Tires:	36 PSI

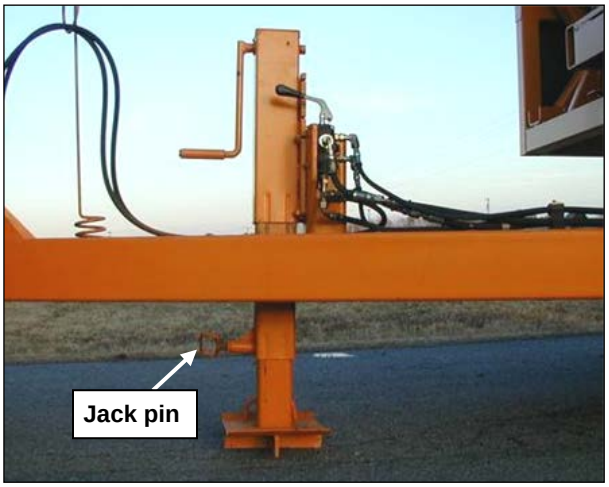
Unload and Assemble, Continued

11. Lower the tongue of the machine so that the wheels are carrying the load.

12. Pull the machine forward off of the trailer.

13. Allow the tongue of the machine to rise so that the machine is sitting on all four wheels.

14. Tow the machine out of the way and lower the jack to secure the machine.



15. To finish assembly, remove the shipping bolts connecting the upper and lower chassis. (This is not required for the C1400.)

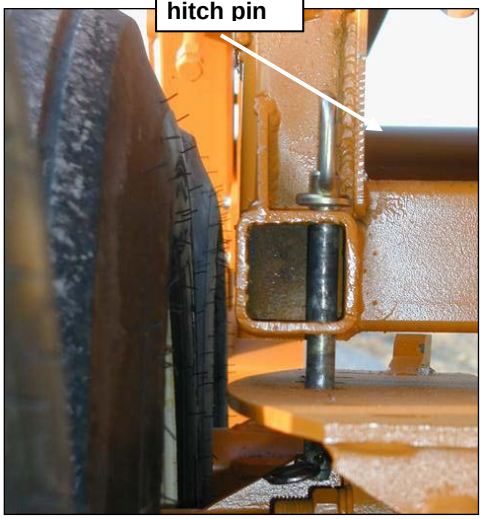
16. Rotate the machine so that the gun lift mechanism is at the rear of the machine.



17. Determine if the machine is to be towed over a long distance or delivered locally.

    - If towed over a long distance, replace the shipping bolts.
    - If delivered locally, leave the shipping bolts out and install the turntable hitch pin.





Once the machine is at its destination:

18. Remove the shipping bolts connecting the upper and lower chassis. (This is not required for the C1400.)

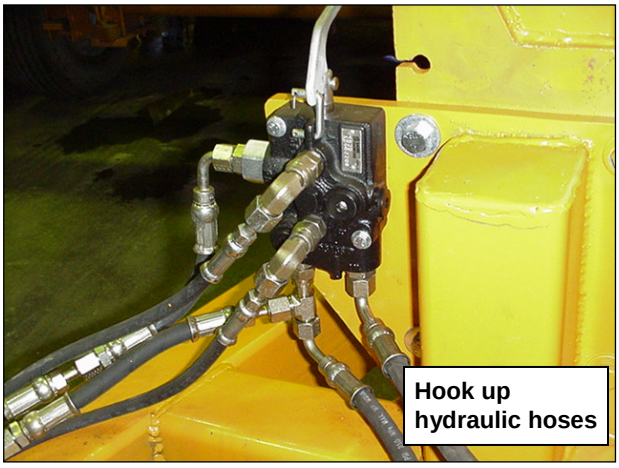
19. Track the gun cart (page 22).

20. Attach the gun cart to the hose. Attach the gun to the cart.

Install Hydraulic Hoses

If the machine is equipped with a hydraulic turntable and/or legs:

1. Hook up the hydraulic hoses.



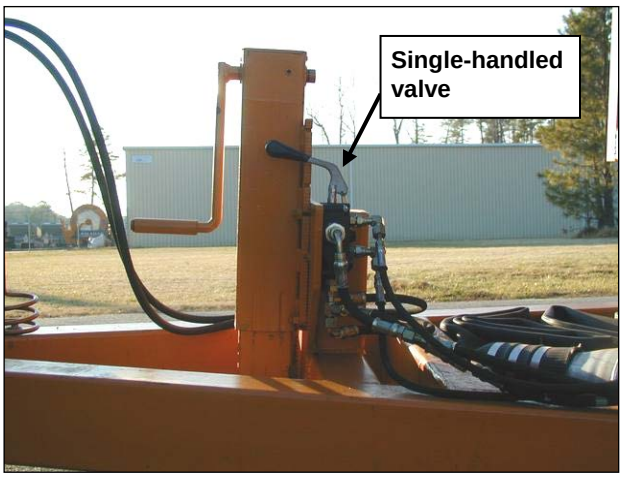
2. Install the clamps holding the hoses to their correct mountings.



CAUTION

Before using the hydraulic legs, remove the nut and bolt securing each hydraulic leg for shipping. Machine damage will result if an attempt is made to move the legs hydraulically with the nuts and bolts still in place.

3. Once the tongue has been installed, mount the single-handled valve that operates the turntable.



Track Gun Cart

1. Roll the gun cart down a straight line on level ground, approximately 20 feet.

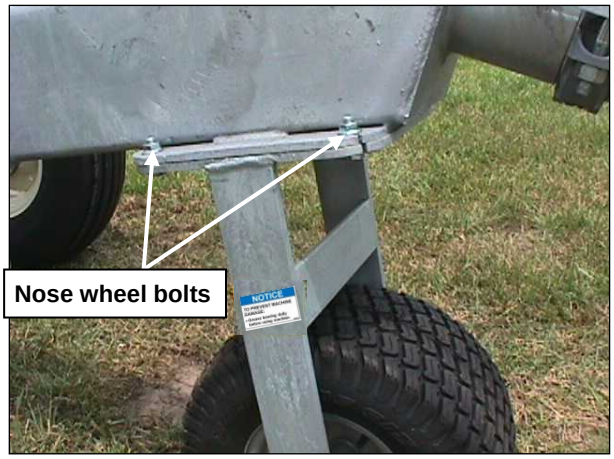
2. Determine if the gun cart rolls in a straight line:

   If yes, connect the gun cart as described in “Hook Up the Gun Cart” on page 23. If no, continue with Step 3.

3. Adjust the nose wheel as follows:

   a. Loosen the four bolts holding the nose wheel in place.
   b. Twist the nose wheel slightly, opposite the direction it is running out of line.
   c. Re-tighten the nose wheel bolts.
   d. Test again.

4. Repeat Step 3 until the gun cart rolls in a straight line.



Hook Up the Gun Cart

NOTE! This process requires two people.

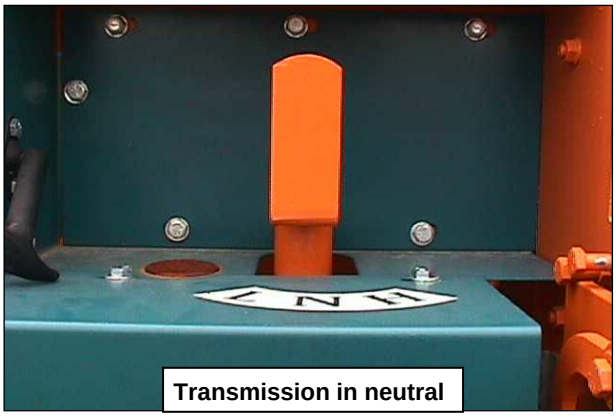
1. Inspect the hose end and the gun cart inlet for excessive deposits of galvanizing material on the gasket sealing surfaces or in the victaulic clamp grooves. The sealing surfaces should be flat and smooth. The victaulic clamp grooves should be full depth with crisp edges.

   If the hot dip galvanizing material has built up in any of these areas, use a flat file to clean up these areas.



2. Disengage the machine brake (arm should be horizontal) and verify that the transmission is in neutral.



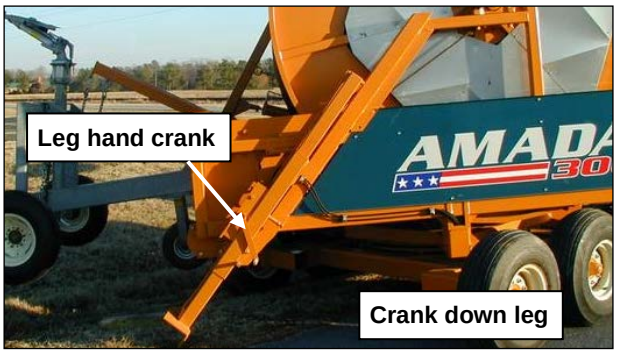


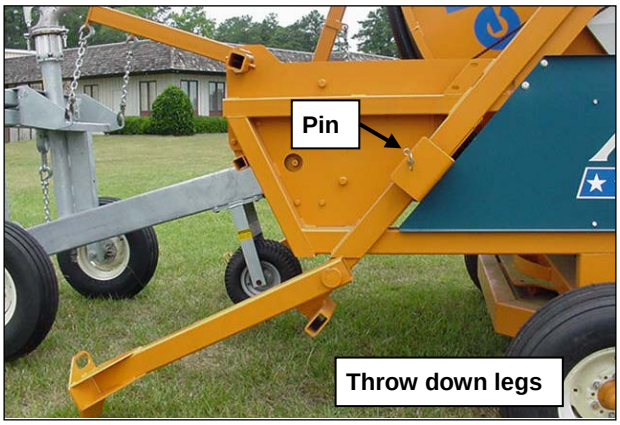
3. Set the tongue jack in place.

For machines NOT equipped with hydraulics:

4. Lower the stabilizer legs:

   - If crank down legs, use hand crank to lower legs completely.
   - If throw down legs, remove pin, unfold and replace pin for each leg.





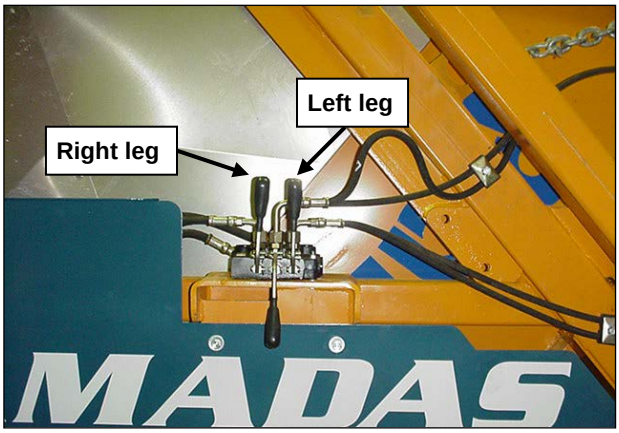
Hook Up the Gun Cart

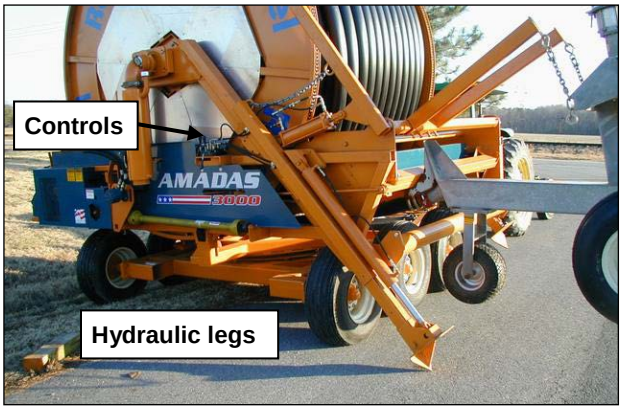
For machines WITH the hydraulic kit:

5. Refer to the photo and raise each leg with the applicable handle.

CAUTION

Before using the hydraulic legs, remove the nut and bolt securing each hydraulic leg for shipping. Machine damage will result if an attempt is made to move the legs hydraulically with the nuts and bolts still in place.





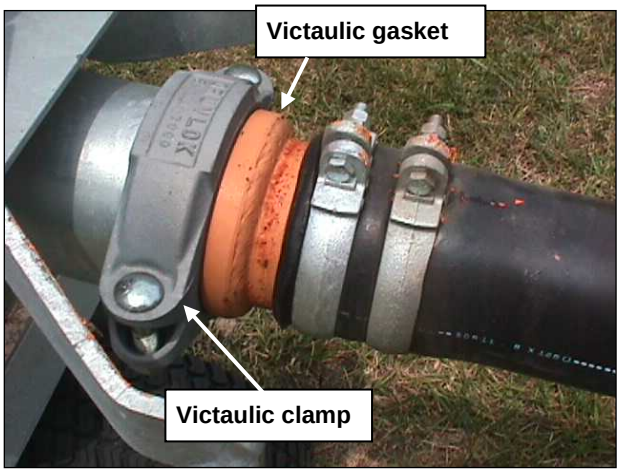
For all machines:

6. Connect a chain or rope to the end of the hose and pull it out 15 to 20 feet.

7. Roll the gun cart into position so that the end of the hose and the gun cart inlet are roughly in line.

8. Lift the small wheel on the gun cart and support it on a wooden block or other suitable object. The wheel should be approximately 12-18 inches off of the ground.

9. Apply grease to the surface of the victaulic gasket and slide it onto the coupler in the hose.



10. Raise the end of the hose and line up the hose coupler and the gun cart coupler.

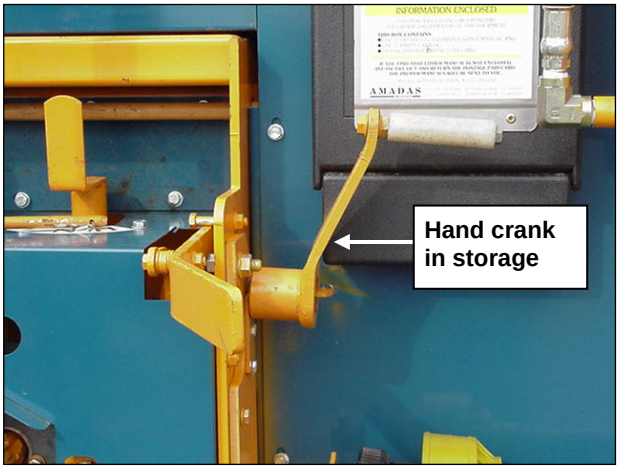
11. Slide the gasket into position on the gun cart coupler and install the victaulic clamp.

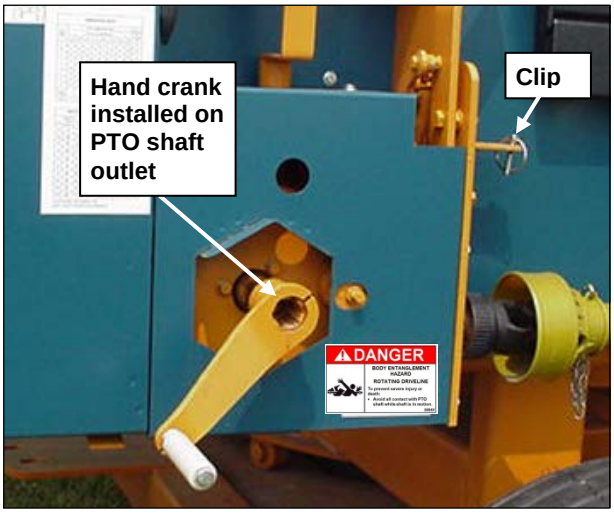
12. Tighten the clamp.

Hook Up the Gun Cart

13. Remove the hand crank from its storage location and attach to the PTO shaft outlet.

NOTE! Replace the clip in storage as shown in the second photo.





14. Wind the hose in using the hand crank.

15. Attach the gun cart lifting chains.



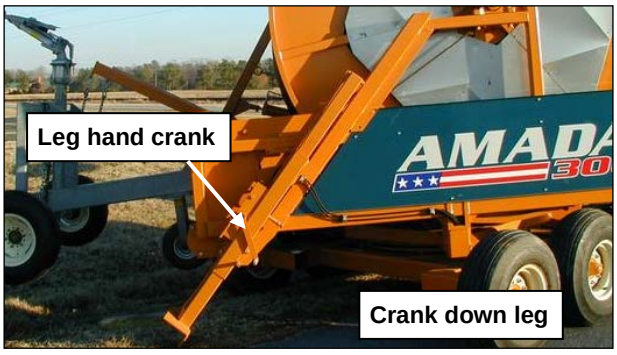
For machines NOT equipped with hydraulics:

16. Lower the gun cart using the winch.

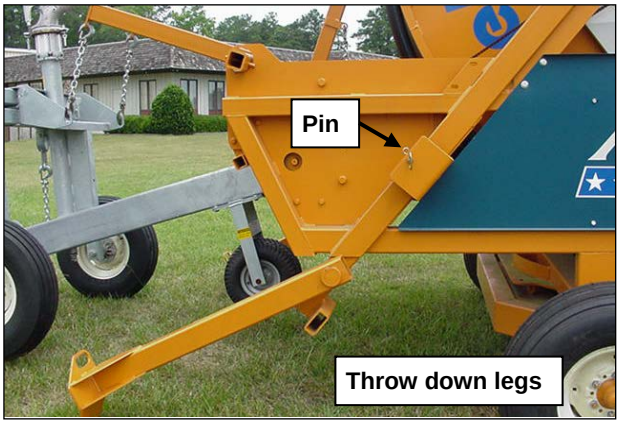


17. Raise the stabilizer legs:

- If crank down legs, use hand crank to raise legs completely.
- If throw down legs, remove pin, fold leg and replace pin for each leg.



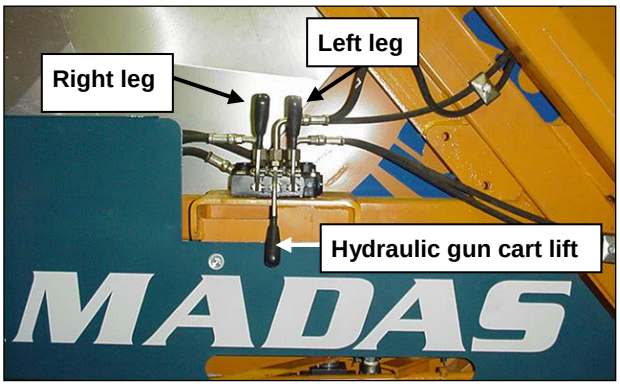
Hook up the Gun Cart

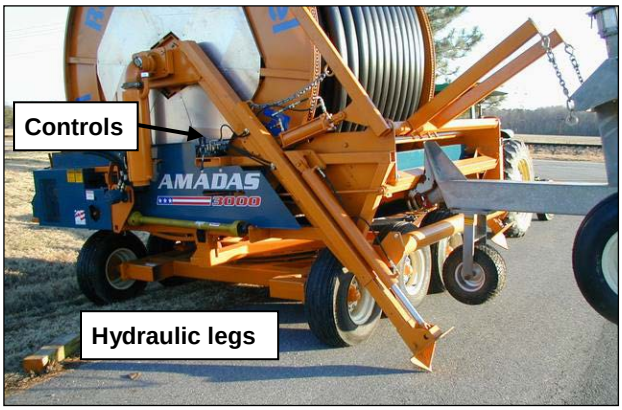


For machines WITH the hydraulic kit:

18. Refer to the photo:

    a. Raise each leg with the applicable handle.
    b. Raise the gun cart with the bottom handle.

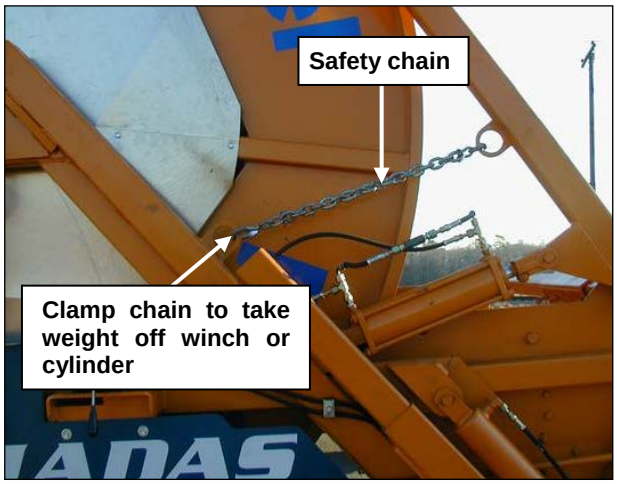




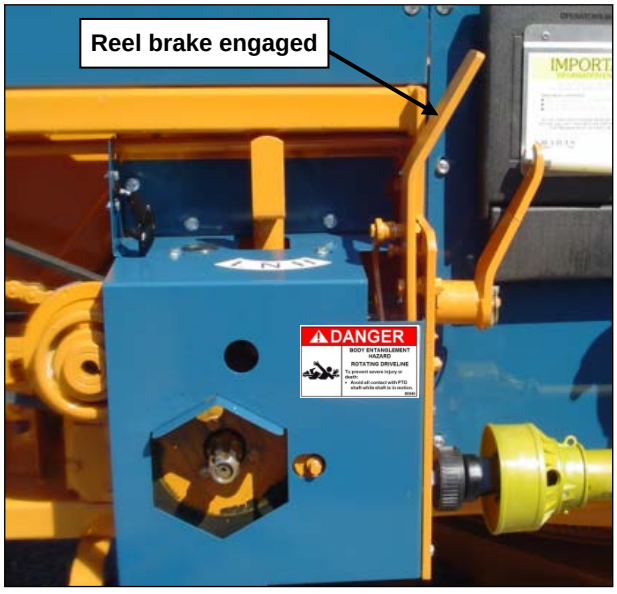
For all machines:

19. Attach the safety chain and lower the gun cart so that the chain is bearing the load.

NOTE! Do NOT transport the Reel Rain without the safety chain in place. If the weight of the gun cart is not put on the chain instead of the winch, the winch may break in transport. For hydraulic lift equipped machines, damage to the hydraulic cylinder or hoses may occur.



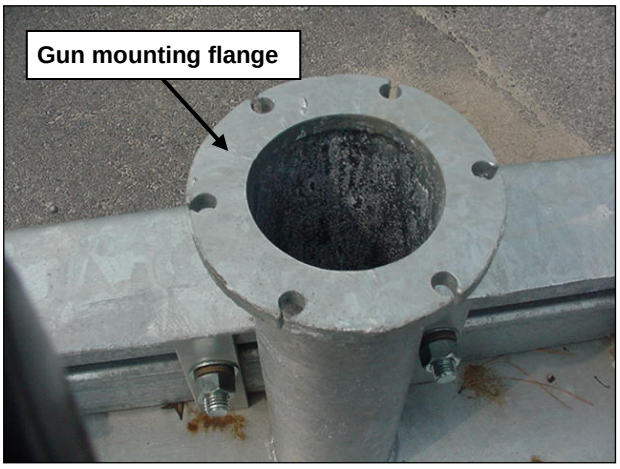
20. Engage the reel brake (handle should be vertical).



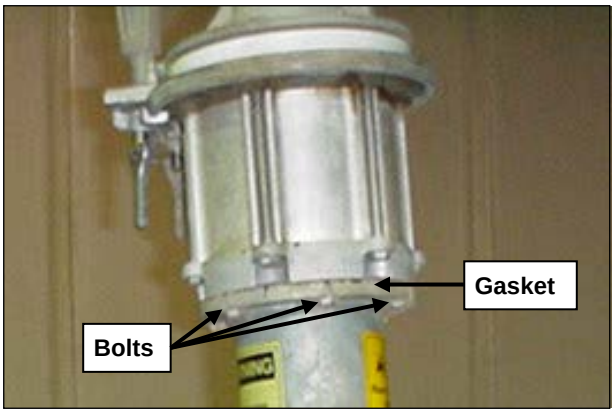
Attach the Gun

1. Inspect the gun mounting flange on the top of the gun cart; it should be smooth. If it is not, the gasket will not seal between the gun and gun mounting flange, which will result in leaks. Severe roughness can even result in damage to the flange of the gun.

   If excessive deposits of material remain on this surface from the hot dip galvanizing process, use a flat file to clean up the area.



2. Place the gasket supplied with the irrigation gun on the mounting flange.



3. Bolt the gun to the mounting flange with the bolts provided.

4. Install the extra nozzle on the gun.

NOTE! The extra nozzle is used for watering the area near the gun cart. This is an optional item that can be installed or left off, as desired.



User Preparation

This section provides the information you need to prepare your Reel Rain Irrigation System for use.

While most of the dealer preparation should be completed when you receive your Reel Rain, refer to the previous section, Dealer Preparation, if you need to perform any additional setup.

Post Delivery Inspection

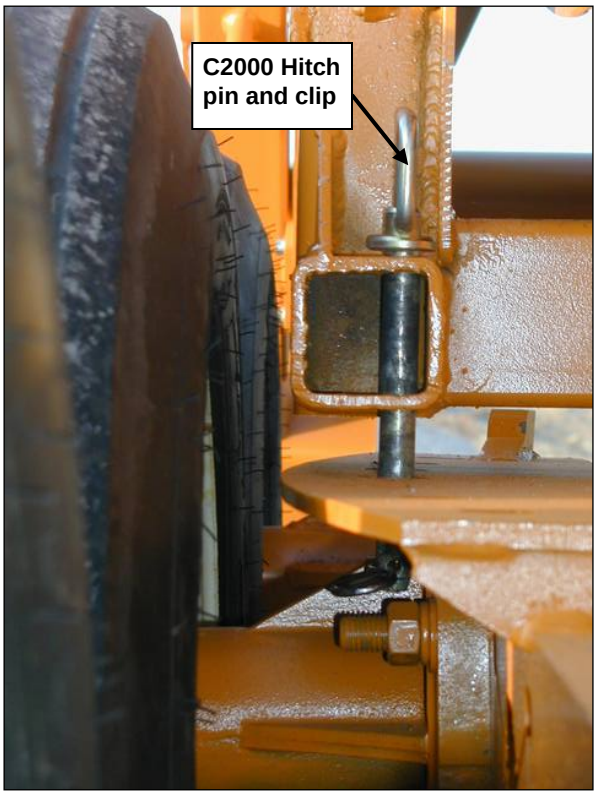
Your Reel Rain irrigator has been carefully prepared for shipping. Please follow these instructions after receiving your Reel Rain Irrigator.

1. Examine the Reel Rain for transport damage. If the machine is damaged in any way, contact your dealer at once.

NOTE! Steps 2 and 3 are not required for the C1400.

2. Remove the four shipping bolts that secure the upper portion of the Reel Rain to the base.

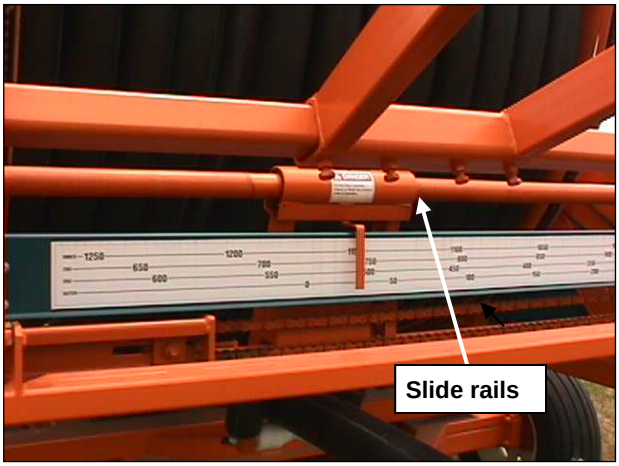
3. Replace the shipping bolt with the hitch pin and clip.

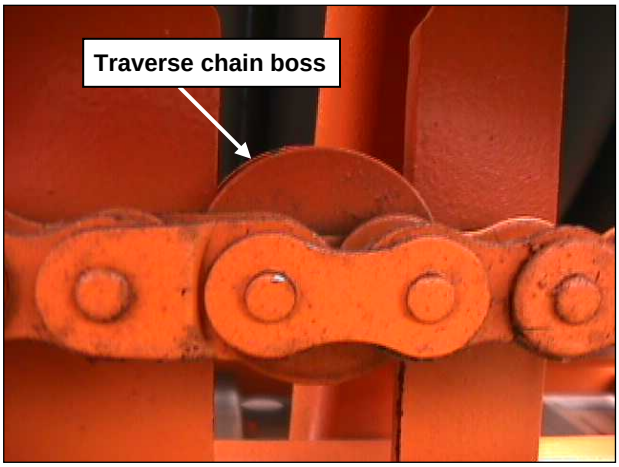


Lubrication

1. Lubricate all grease fittings with a good grade of general purpose grease (see Chapter 6, *Maintenance*, for locations of grease fittings).

2. Grease the slider assembly on the rear of the traverse frame. This includes both the slide rails and the traverse chain boss track.

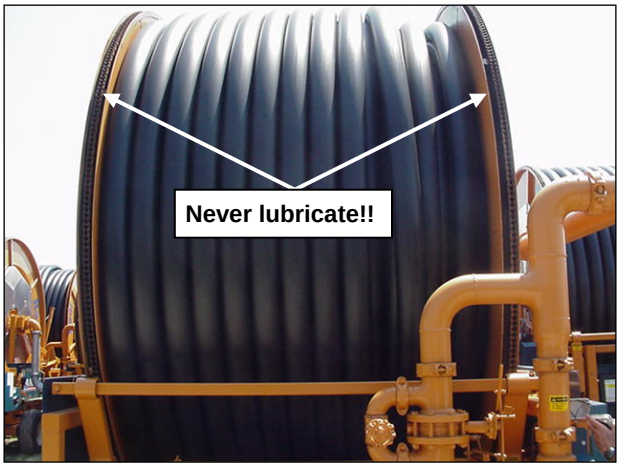




CAUTION

It is important that these points remain lubricated for the Reel Rain to work safely and efficiently.

NEVER lubricate the reel drum drive chains!! Doing so will cause the reel drive to slip.

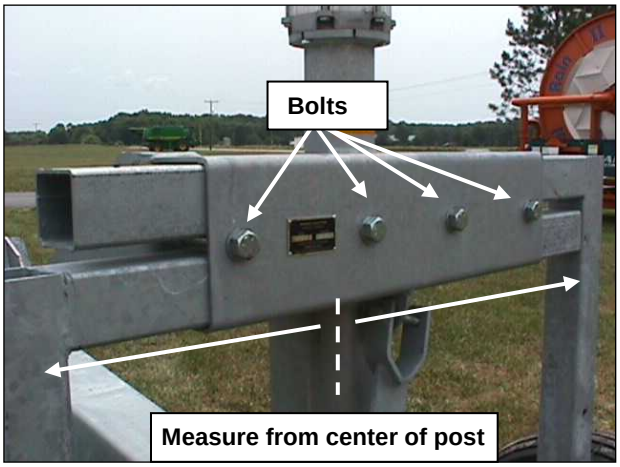


Adjust Gun Cart Width

The main wheels can be adjusted to fit different width rows. To adjust the width:

1. Determine the row width and divide by two (for example: 72” row / 2 = 36”).

2. Loosen the bolts indicated.



3. Pull each leg out the number of inches calculated in Step 1, beginning the measurement from the center of the gun holder. Wider settings increase stability, so use as much width as possible.

4. Place the Slow Moving Vehicle (SMV) sign included with the Reel Rain over a bolt and straighten.



5. Tighten all bolts.

Inspection Checklist

After performing the post-delivery inspection and lubrication described on the previous page, make sure to do all the items on the Inspection Checklist. These items should also be performed each time you use the Reel Rain.

Checklist

- √ Check all shields. Do NOT operate unless all shields are in place.
- √ Check all hose connections. Tighten or connect if necessary.
- √ Check the oil level in the transmission and traverse gearbox. If needed, fill with SAE 90 weight oil to the top of the level plug.
- √ Check the air pressure in the tires. The pressure should be 90 PSI for the C2000 and C3000, and 36 PSI for the C1400. Inflate if needed.
- √ Check the lug nuts and/or bolts to make sure none have loosened in transport. Lug nuts should be tightened to 125 ft/lbs on the C2000/C3000 and to 200 ft/lbs on the C1400.

NOTES

3. Operation Overview

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Reel Rain Operation

AMADAS Reel Rains are hard hose traveler irrigators. They have been designed with the operator in mind to give you what you need most from a hard hose traveler: quick setup, simple operation, and low maintenance. Using the C2000 and C3000 Series Reel Rains, you can achieve irrigation rates of up to 200 acres per week when applying 1" of water.

Your Reel Rain applies a uniform application of water over your crops at a rate that you determine. Included in this chapter are charts to help you determine the best settings to suit your needs.

Always be careful when you tow the irrigator. Hard hose travelers have an inherently high center of gravity, which can make them unstable on hillsides and during sharp turns. While the Reel Rain's design has minimized this problem, the heavy weight of the machine when filled with water needs to be taken into account. Chapter 3, *Set up and Operation*, contains more information on safely transporting the Reel Rain.

Special attention has been paid to the convenience of operating the Reel Rain, but not at the expense of safety. Please review Chapter 1, *Safety*, for safety information prior to operating the Reel Rain.

Performance

The Reel Rain operates as described in the following steps.

Step 1.
The Reel Rain consists of a polyethylene hose, attached on one end to a water supply, wound around a reel drum, with the other end of the hose connected to a gun cart. Before irrigating, the gun cart is towed away from the Reel Rain, causing the hose to unwind.

Step 2.
Turbine Driven Models
Water pumped through the Reel Rain hose passes first through a turbine. The energy from the water as it passes through the turbine rotates the drum, which reels the hose back in. As the hose and cart reel in, the gun applies a uniform application over the entire lane the gun cart travels.

Engine Driven Models
With the engine driven models, the energy needed to rotate the drum is supplied by the engine. As the hose and cart are reeled in, the gun applies a uniform application over the entire lane the gun cart travels.

Step 3.
Once the cart is reeled back to the drum, it strikes a cutoff bar, which automatically shuts off the engine or turbine that reels in the hose. The Reel Rain continues to spray water.

NOTE! The faster the hose is rewound, the quicker the machine can be moved to the next lane. However, a slow retrieval speed is necessary for a high water application rate. To determine the correct speed for your needs, please refer to the chart guidelines included in this chapter.

Equipment Applications

The Reel Rain Traveler Irrigation System can be used to pump clear water, waste water, gray water, or slurry. If the Reel Rain will be used to pump clear water or waste water with very low solid contents and particle size, a turbine driven irrigator is recommended. Different flow rate impellers are available for the axial turbine. If the Reel Rain will be used to pump water with high solid content, it is recommended that an engine-powered irrigator be used. Always flush out the Reel Rain after use when pumping waste.

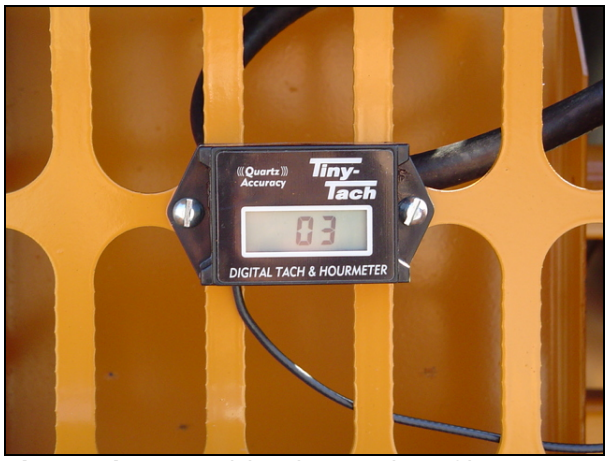
Guns

The recommended gun to use for pumping waste water and slurry is an irrigation gun with a taper bore nozzle.

Displays

There are two types of digital displays for the Reel Rain:

- "Tiny Tachometer" – this display unit is standard on the engine driven Reel Rain. The display shows the RPM speed at which the engine is running. If the engine is not running, the tachometer displays the number of hours the engine has run.



Tiny Tachometer (showing number of hours engine has been run)

- Digital speed readout – this display unit is standard on all Reel Rains. The display shows the ground speed of hose retrieval of the *innermost* layer of hose. Conversion charts are provided on the Reel Rain to determine the retrieval speed of the other layers of hose. See Chapter 6, *Adjustments*, for information on setting this display.

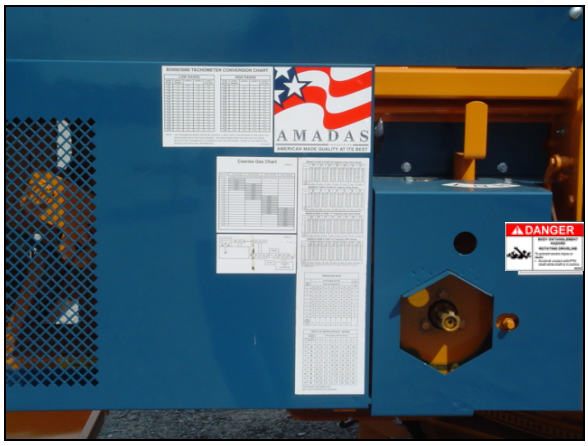


Digital Speed Readout

Flow Rate

Flow rates are determined by the water pressure at the gun and the size of the gun nozzle and/or ring. Application rates are determined by a combination of the flow rate and the ground speed of hose retrieval. The charts in this chapter are provided to help you determine the correct speed, lane spacing, and depth of water to apply for your application.

Note that the charts are also posted on the Reel Rain, as shown in the following photo:



Flow Rate, Continued
To use the charts:

1. With the irrigator on, check the pressure gauge to determine water pressure (PSI) at the gun.

2. Refer to the chart for your gun. Cross reference the PSI determined in Step 1 with the ring size installed on your gun. The resulting numbers give you the gallons per minute (GPM) and the diameter (by feet) of ground sprayed (DIA).

   For example: The PSI is equal to 90 and your Nelson SR Big Gun is equipped with a 1.75" ring. The GPM is 855 and the DIA is 535 feet.

3. Next refer to the "Reel Maximum Travel Lane Spacing" chart. Locate the sprinkler wetted diameter feet and cross reference the number to the wind speed column.

   For example: The DIA is 535 feet and the wind is up to 10 MPH. The maximum lane spacing should be 325'.

4. Now refer to the Depth of Water Applied by Reel Rain chart. Locate your GPM and lane spacing and cross reference these numbers to the number of inches of water you want applied. Interpolation of numbers in the chart will be necessary. The resulting number gives you the retrieval speed of the hose necessary for you to apply the desired number of inches.

   For example: The GPM is 855 and maximum lane spacing is 325. You want to apply 1 inch of water. The resulting speed is approximately 4.5 ft/min.

5. Refer to the C1400/C2000/C3000 Hose Speed Chart. Locate the desired ground speed and use this chart to set your gear range and pulleys to achieve your ground speed. The hose speed on the inner layer of the drum can be read directly from the digital speed readout on turbine machines but must be converted by the chart from the engine RPM reading on gas engine driven machines.

NOTE! If the flow rate exceeds 300 GPM, fluid must be added to the tires of the gun cart to aid stability. If necessary, wheel weights can also be added to the cart or the track width extended. Gun recoil can overturn the cart.

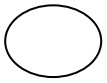
Hoses

Hose Shape

Note that the Reel Rain hose shape changes slightly when water pressure is turned off. The Hose Indicator is designed for measuring a pressurized hose and is therefore slightly more accurate when there is water pressure in the system.



With pressure



Without pressure

Hose Indicator

The hose indicator, located under the gun cart lift, indicates how many feet of hose remain ***un***wound. The indicator shows the number of feet left on the reel, according to the number of layers. In the example, the amount of hose remaining unwound is for each layer left on the reel.





Amount of Feet Unwound Per Layer Based on Above Example's Indicator Placement

Layers on Reel	Feet Unwound
One layer	1150
Two layers	650
Three layers	500
Four layers	less than 50

Charts and Tables

Nelson 200 Series Big Gun

NELSON 200 SERIES BIG GUN - 27º TRAJECTORY – TAPER BORE NOZZLE																		
PSI	Nozzle 1.05"		Nozzle 1.1"		Nozzle 1.2"		Nozzle 1.3"		Nozzle 1.4"		Nozzle 1.5"		Nozzle 1.6"		Nozzle 1.75"		Nozzle 1.9"	
	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA
60	250	345'	285	355'	330	375'	385	390'	445	410'	515	430'	585	445'	695	470'	825	495'
70	270	360'	310	380'	355	395'	415	410'	480	490'	555	450'	630	465'	755	495'	890	515'
80	290	375'	330	395'	380	410'	445	430'	515	450'	590	470'	675	485'	805	515'	950	535'
90	310	390'	350	410'	405	425'	475	445'	545	465'	625	485'	715	505'	855	535'	1005	555'
100	325	400'	370	420'	425	440'	500	460'	575	480'	660	500'	755	520'	900	550'	1060	575'
110	340	410'	390	430'	445	450'	525	470'	605	495'	695	515'	790	535'	945	565'	1110	590'
120	355	420'	405	440'	465	460'	545	480'	630	505'	725	530'	825	550'	985	580'	1160	605'
130	370	425'	425	445'	485	465'	565	485'	655	515'	755	540'	860	560'	1025	590'	1210	620'

MODELS F200R & P200T 24º Trajectory RING Nozzle														
PSI	1 1/4" Ring (1.29"act.)		1 3/8" Ring (1.46" act.)		1 1/2" Ring (1.56" act.)		1 5/8" Ring (1.66" act.)		1 3/4" Ring (1.74" act.)		1 7/8" Ring (1.83" act.)		2" Ring (1.93" act.)	
	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.
50	230	325'	300	355'	350	370'	410	390'	470	405'	535	420'	640	435'
60	250	340'	330	370'	385	390'	445	410'	515	425'	585	440'	695	455'
70	270	355'	355	385'	415	405'	480	425'	555	440'	630	455'	755	475'
80	290	370'	380	400'	445	420'	515	440'	590	455'	675	470'	805	490'
90	310	380'	405	415'	475	435'	545	455'	625	470'	715	485'	855	505'
100	325	390'	425	425'	500	445'	575	465'	660	480'	755	500'	900	520'
110	340	400'	445	435'	525	455'	606	475'	695	490'	790	510'	945	535'
120	355	410'	465	445'	545	465'	630	485'	725	500'	825	520'	985	545'
130	370	415'	485	450'	564	470'	655	490'	755	505'	860	525'	1025	550'
PPT RATE**	31"/ hr.		34"/hr.		37"/hr.		39"/hr.		42"/hr.		45"/hr.		49"/hr.	

**The diameter of thow is approximately 2% less for the 24º trajectory angle and 5% less for the 21º trajectory angle.

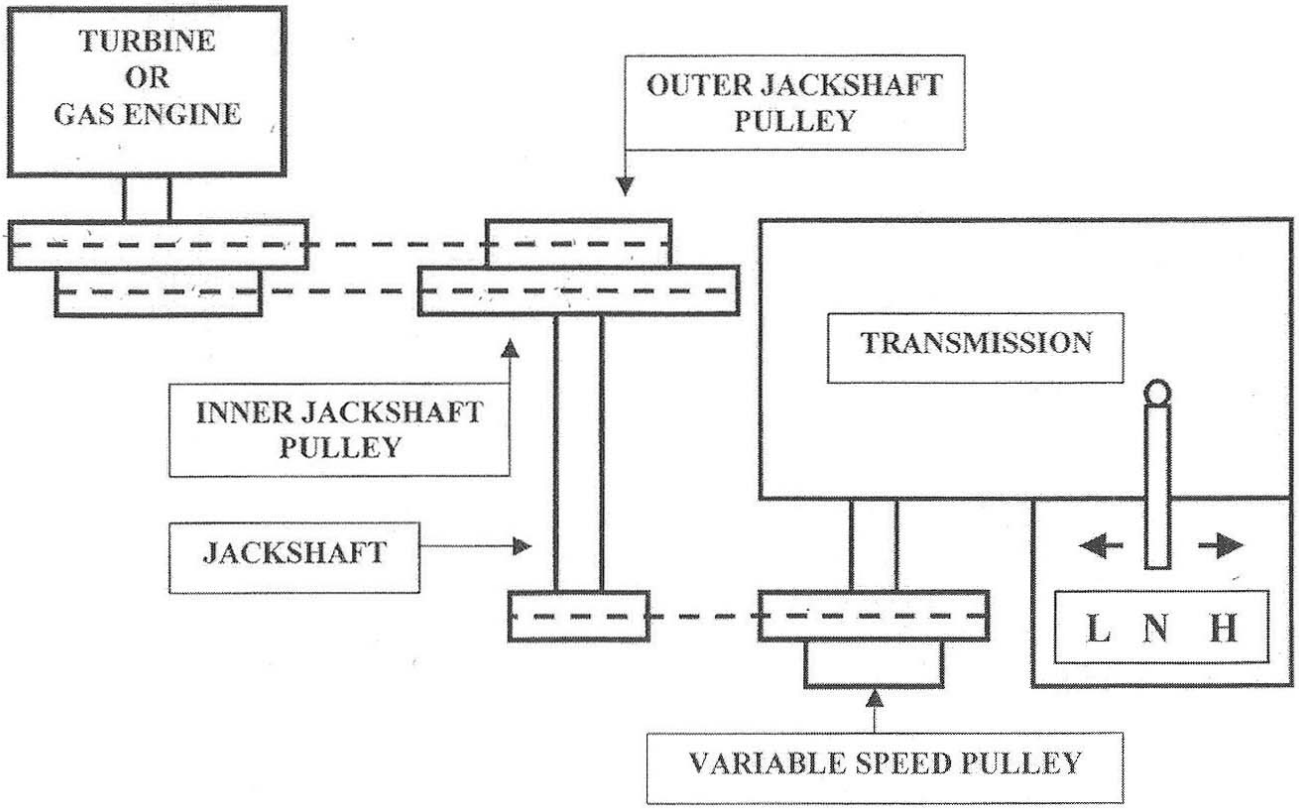
Komet Twin 202/Plus

KOMET TWIN 202/PLUS - 24º TRAJECTORY – TAPER BORE NOZZLE																		
PSI	Nozzle 0.79"		Nozzle 0.89"		Nozzle 0.98"		Nozzle 1.08"		Nozzle 1.18"		Nozzle 1.28"		Nozzle 1.38"		Nozzle 1.48"		Nozzle 1.58"	
	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA	GPM	DIA
40	110	279'	139	294'	172	308'	208	328'	248	349'	291	360'	337	374'	387	380'	440	387'
50	123	289'	156	317'	192	335'	233	353'	277	376'	325	388'	377	400'	433	406'	492	413'
60	135	314'	171	334'	211	353'	255	373'	303	393'	356	404'	413	413'	474	420'	539	426'
70	146	327'	184	347'	227	367'	275	388'	328	407'	384	418'	446	426'	512	433'	582	439'
80	156	340'	197	360'	243	380'	294	401'	350	421'	411	432'	476	439'	547	446'	622	452'
90	165	350'	209	372'	258	392'	312	413'	371	433'	436	445'	506	456'	580	462'	660	469'
100	174	359'	220	381'	272	402'	329	423'	392	444'	459	454'	533	462'	612	469'	696	475'
110	182	368'	231	390'	285	412'	345	432'	411	452'	482	461'	559	472'	642	475'	730	480'
120	191	377'	241	399'	298	421'	360	441'	429	461'	503	468'	584	476'	670	480'	762	484'

Travel Lane Spacing

REEL RAIN MAXIMUM TRAVEL LANE SPACING (FEET)							
Sprinkler Wetted Diameter Feet	Percent of Wetted Diameter						
	50	55	60	65	70	75	80
	Wind Over 10 MPH		Wind up to 10 MPH		Wind up to 5 MPH		No Wind
200	100	110	120	130	140	150	160
250	125	137	150	162	175	187	200
300	150	165	180	195	210	225	240
350	175	192	210	227	245	262	280
400	200	220	240	260	289	300	320
450	225	248	270	292	315	338	360
500	250	275	300	325	350	375	400
550	275	302	330	358	385	412	440
600	300	330	360	390	420	__	__

Pulley Arrangement Diagram



Hose Speed

Turbine

C SERIES HOSE SPEED/TURBINE RPM

REQUIRED GEAR RANGE AND PULLEY
FOR DESIRED GROUND SPEED (IN FEET PER MINUTE)

Ground Speed	Low Range Inner Pulley	Low Range Outer Pulley	High Range Inner Pulley	High Range Outer Pulley
1.00	1693			
1.25	2117			
1.50	2540	1796		
1.75	2963	2096		
2.00	3386	2395		
2.25		2695		
2.50		2994	1719	
2.75		3293	1891	
3.00			2062	
3.25			2234	
3.50			2406	
3.75			2578	
4.00			2750	1945
4.50			3094	2188
5.00			3437	2431
5.50				2674
6.00				2917
6.50				3161
7.00				3404

NOTE: NOT ALL SPEED CAN BE ACHIEVED UNDER ALL CONDITIONS, TURBINES ARE FLOW AND PRESSURE SENSITIVE. HIGH SPEEDS REQUIRE HIGHER FLOW RATES AND PRESSURES. THIS CHART IS INTENDED AS A GENERAL GUIDELINE ONLY. SEE OPERATIONS MANUAL FOR ADDITIONAL INFORMATION.

Engine

C1400/C2000/C3000 HOSE SPEED CHART

ENGINE DRIVE

ENGINE RPM FOR A GIVEN GROUND SPEED (FEET PER MINUTE)

GEAR RANGE, AND PULLEY

GROUND SPEED	LOW RANGE INNER PULLEY	LOW RANGE OUTER PULLEY	HIGH RANGE INNER PULLEY	HIGH RANGE OUTER PULLEY
1.25	2117			
1.50	2540			
1.75	2963	2096		
2.00	3387	2395		
2.25	3810	2695		
2.50		2994		
2.75		3293		
3.00		3593	2063	
3.25		3892	2234	
3.50			2406	
3.75			2578	
4.00			2750	
4.50			3094	2188
5.00			3437	2431
5.50			3781	2674
6.00				2917
6.50				3161
7.00				3404
7.50				3647
8.00				3890

NOTE: NOT ALL SPEEDS CAN BE ACHIEVED UNDER ALL CONDITIONS.
SEE THE OPERATOR'S MANUAL FOR ADDITIONAL INFORMATION.

Irrigation Rate

IRRIGATION RATE									
Travel Speed Ft./Min.	Acres Irrigated per Hour								Hours Required for 1/4 Mile Travel
	Travel Lane Spacing, Ft.								
	165	200	240	270	300	330	360	400	
0.4	0.09	0.10	0.13	0.15	0.16	0.18	0.20	0.22	55
0.5	0.11	0.14	0.16	0.19	0.21	0.23	0.25	0.28	44
1	0.22	0.27	0.33	0.37	0.41	0.45	0.49	0.55	22
2	0.45	0.54	0.66	0.75	0.82	0.9	0.99	1.10	11
4	0.90	1.10	1.32	1.49	1.65	1.81	1.98	2.20	5.5
6	1.36	1.65	1.98	2.23	2.48	2.72	2.98	3.30	3.7
8	1.81	2.20	2.64	2.97	3.30	3.63	3.36	4.40	2.7
10	2.27	2.75	3.30	3.72	4.13	4.54	4.95	5.50	2.2
Acres Irrigated in 1/4 Mi. Travel	5.0	6.0	7.3	8.2	9.1	10.0	10.9	12.1	

Depth of Water Applied

DEPTH OF WATER APPLIED - INCHES									
G.P.M.	Spacing Between Travel Lanes, Ft.	Travel Speed, Feet Per Minute							
		0.4	0.5	1	2	4	6	8	10
100	165	2.40	1.90	1.00	0.49	0.24	0.16	0.12	0.10
200	180 200	4.5 4.0	3.6 3.2	1.8 1.6	0.89 0.81	0.45 0.40	0.30 0.27	0.22 0.20	0.18 0.16
300	200 270	6.0 4.5	4.8 3.6	2.4 1.8	1.20 0.89	0.60 .045	0.40 0.30	0.30 0.22	0.24 0.18
400	240 300	6.7 5.4	5.4 4.3	2.7 2.1	1.34 1.07	0.67 0.54	0.45 0.36	0.33 0.27	0.27 0.21
500	270 330	7.4 6.1	5.9 4.9	3.0 2.4	1.49 1.22	0.74 0.61	0.50 0.41	0.37 0.30	0.30 0.24
600	270 330	8.9 7.3	7.1 5.8	3.6 2.9	1.80 1.46	0.89 0.73	059 0.49	0.45 0.36	0.36 0.29
700	270 330	10.4 08.5	8.3 6.8	4.2 3.4	210 1.70	1.04 0.85	0.69 0.57	0.52 0.43	0.42 0.34
800	300 360	10.7 08.9	8.6 7.1	4.3 3.6	2.10 1.78	1.07 0.89	0.71 0.59	0.54 0.45	0.43 0.36
900	300 360	12.0 10.0	9.6 8.0	4.8 4.0	2.4 2.0	1.20 1.00	0.80 0.67	0.60 0.50	0.48 0.40
1000	330 360	12.2 11.1	9.7 8.9	4.9 4.5	2.4 2.2	1.22 1.11	0.81 0.74	0.61 0.56	0.49 0.45

Tachometer Conversion

1400/2000/3000 TACHOMETER CONVERSION CHART

LOW RANGE				
ACTUAL HOSE SPEED	DIGITAL READOUT DISPLAY			
	LAYER 1 (INNER)	LAYER 2	LAYER 3	LAYER 4 (OUTER)
1.00	1.0	0.9	0.8	0.8
1.25	1.3	1.2	1.1	1.0
1.50	1.5	1.4	1.3	1.2
1.75	1.8	1.6	1.5	1.3
2.00	2.0	1.9	1.7	1.5
2.25	2.3	2.1	1.9	1.7
2.50	2.5	2.3	2.1	1.9
2.75	2.8	2.5	2.3	2.1
3.00	3.0	2.8	2.5	2.3
3.25	3.3	3.0	2.7	2.5
3.50	3.5	3.2	2.9	2.7
3.75	3.8	3.5	3.2	2.9
4.00	4.0	3.7	3.4	3.1
4.50	4.5	4.2	3.8	3.5
5.00	5.0	4.6	4.2	3.9
5.50	5.5	5.1	4.6	4.2
6.00	6.0	5.6	5.0	4.6
6.50	6.5	6.0	5.5	5.0
7.00	7.0	6.5	5.9	5.4
7.50	7.5	6.9	6.3	5.8
8.00	8.0	7.4	6.7	6.2

HIGH RANGE				
ACTUAL HOSE SPEED	DIGITAL READOUT DISPLAY			
	LAYER 1 (INNER)	LAYER 2	LAYER 3	LAYER 4 (OUTER)
2.00	0.8	0.8	0.7	0.6
2.25	0.9	0.8	0.8	0.7
2.50	1.0	0.9	0.9	0.8
2.75	1.1	1.0	0.9	0.9
3.00	1.2	1.1	1.0	0.9
3.25	1.3	1.2	1.1	1.0
3.50	1.4	1.3	1.2	1.1
3.75	1.5	1.4	1.3	1.2
4.00	1.6	1.5	1.4	1.3
4.50	1.8	1.7	1.5	1.4
5.00	2.0	1.9	1.7	1.6
5.50	2.2	2.1	1.9	1.7
6.00	2.4	2.3	2.1	1.9
6.50	2.6	2.4	2.2	2.0
7.00	2.8	2.6	2.4	2.2
7.50	3.0	2.8	2.6	2.3
8.00	3.3	3.0	2.7	2.5
8.50	3.5	3.2	2.9	2.7
9.00	3.7	3.4	3.1	2.8
9.50	3.9	3.6	3.2	3.0
10.00	4.1	3.8	3.4	3.1
10.50	4.3	4.0	3.6	3.3
11.00	4.5	4.1	3.8	3.4
11.50	4.7	4.3	3.9	3.6
12.00	4.9	4.5	4.1	3.8
12.50	5.1	4.7	4.3	3.9

NOTE: THE TACHOMETER SPEED DROPS ON LAYERS 2,3, AND 4 DUE TO AN INCREASE IN THE EFFECTIVE DRUM DIAMETER AS THE HOSE REWINDS. THE HIGH RANGE DOES NOT READ ACTUAL SPEED BECAUSE THE TACHOMETER IS CALIBRATED FOR THE LOW RANGE. REFER TO THE OPERATORS MANUAL FOR ADDITIONAL INFORMATION.
DIGITAL READOUT VALUES PROVIDED ARE ACCURATE TO +/- 5%.

80409

NOTES

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Towing

Remember the following when transporting your machine, particularly when towing longer distances.



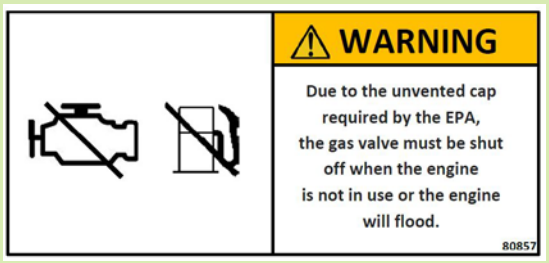
- Always remove water from the machine before towing long distances.
- Never tow the machine at speeds in excess of 10 MPH with water or 20 MPH when empty.
- Never tow the machine on grades exceeding 5%.
- If the gun cart is attached, make sure the lift safety chain is in place on winch lift machines.

Towing Checklist

Please read the towing checklist. It is important you perform these checks *every* time you tow your machine, whether a short or long distance.

Checklist

√ If equipped with an engine, close the cut-off valve at the bottom of the gas tank and turn the fuel valve off at the engine.



√ Make sure the turntable is positioned as shown in the picture to the left and the locking pin is in place to prevent the turntable from rotating.

√ Clear everyone from the area around the Reel Rain and between the Reel Rain and gun cart.

√ Make sure that the stabilizer legs are raised and locked.

√ Make sure a safety chain is attached from the Reel Rain to the towing vehicle.

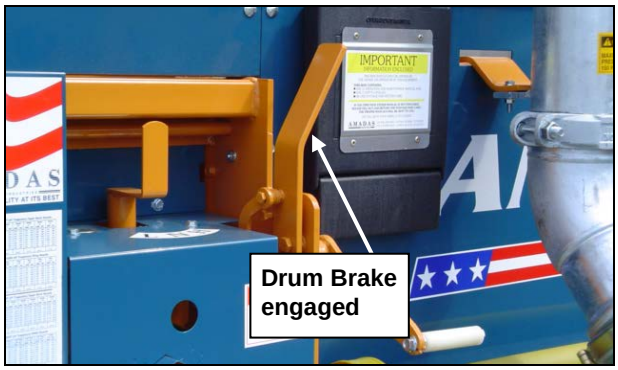
√ Attach the safety chain to the gun cart lift arm to take the load from the crank handle lift.

√ Engage the drum brake.

Tow to the Field

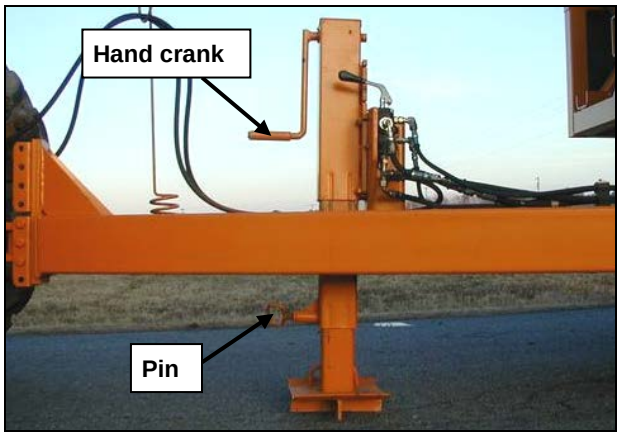
NOTE! Before towing the Reel Rain to the field, make sure the gun cart is attached, stabilizer legs raised, and the turntable rotated as described on the previous page.

1. Engage the drum brake (handle should be vertical.



2. Drive the tractor to the front of the Reel Rain and hook the irrigator to the drawbar.

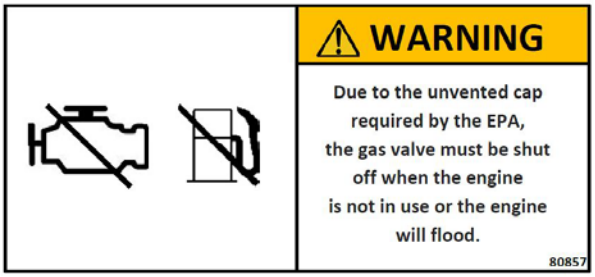
3. Turn the crank until the tractor is supporting the irrigator.

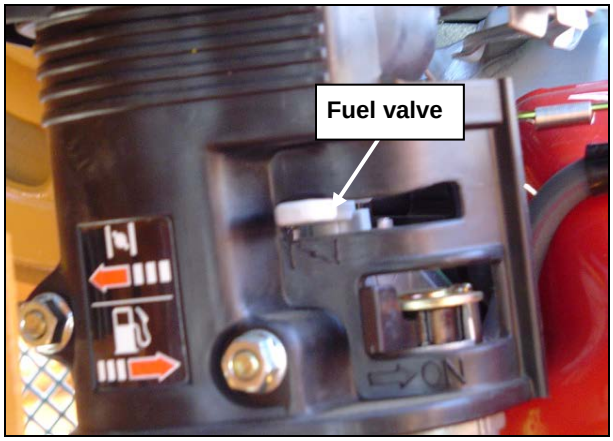


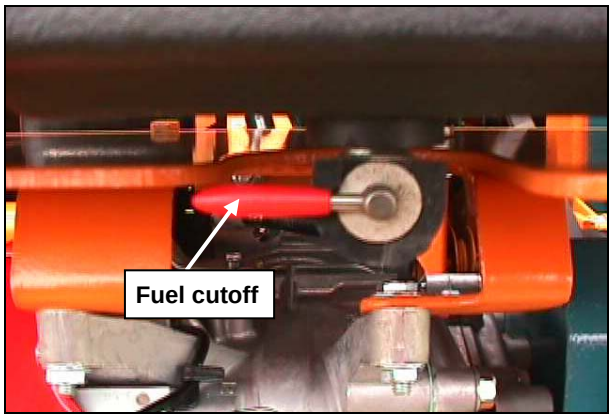
4. Pull out the pin and raise the jack drop leg all the way up as far as it will go.

5. Release pin to snap back in place.

6. If equipped with a Honda engine, turn off the fuel valve on the carburetor and fuel cutoff valve under the gas tank.



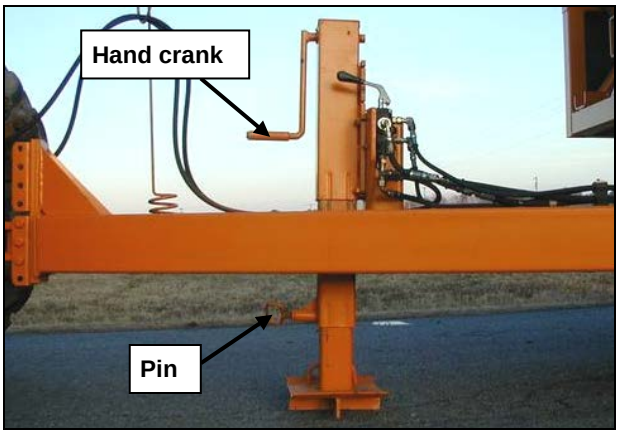




7. Follow all towing safety rules (page 48) to tow irrigator to location.

Detach Tractor

1. Pull out the pin and lower the jack drop leg
2. Release the pin to snap back into place.
3. Crank the jack until the irrigator hitch clears the tractor.



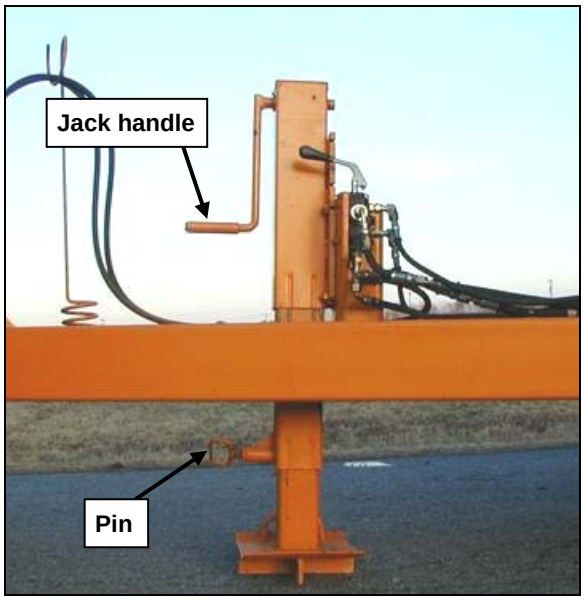
Machine Placement

Position Machine

1. Determine the irrigation pattern and decide on lane spacing for the machine. Remember to make necessary allowances for wind. See the “Charts” section in Chapter 3, *Operation Overview*.

2. Position the machine in the desired location in the field.

3. Pull out the pin on the jack drop leg and lower the leg to the ground.

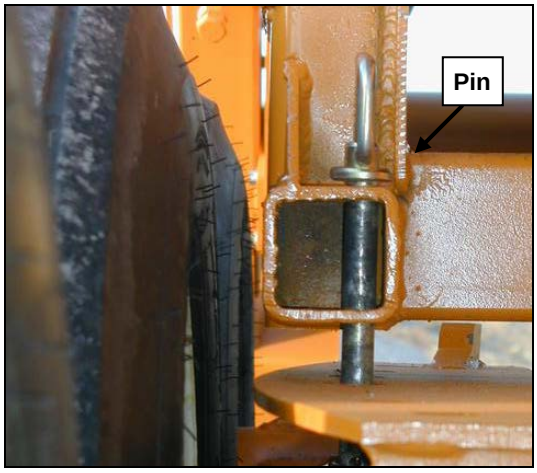


4. Lower the jack by rotating the jack handle until the jack foot is firmly set in the ground.

IMPORTANT! The machine’s bottom frame should be parallel to the ground. Raise or lower the jack on the tongue until the frame is parallel.

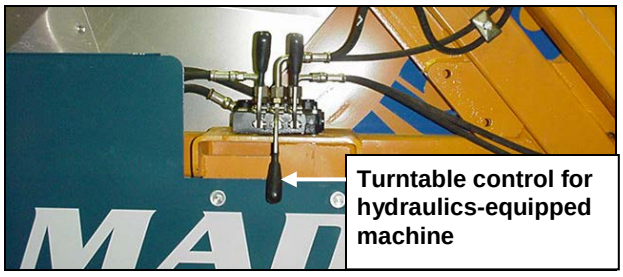
NOTE! Steps 5-7 below do not apply to the C1400 as it has a fixed turntable.

5. Remove the pin securing the turntable.



6. Rotate the turntable by pushing on the gun cart if manual or with the tractor hydraulics if so equipped (second picture). The turntable pin should align with the center hole if possible. This setting will provide the maximum stability of the reel chassis during hose retrieval.





7. Re-install the pin securing the turntable.

Lower Stabilizer Legs

NOTE! There are three versions of stabilizer legs for the Reel Rain. Your irrigator's stabilizer legs may or may not look like the ones shown in the photos, but will function as described below.

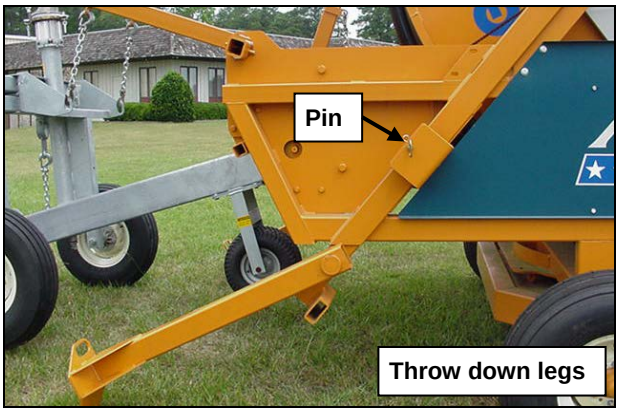
CAUTION

Pinch Point! Never allow your limbs or fingers to get between the leg and the Reel Rain frame. Injury could occur if limbs or fingers are pinched between the leg and framework.

For machines NOT equipped with hydraulics:

1. Raise the stabilizer legs:
   - If crank down legs, use hand crank to raise legs completely.
   - If throw down legs, remove pin, fold up leg, and replace pin for each leg.



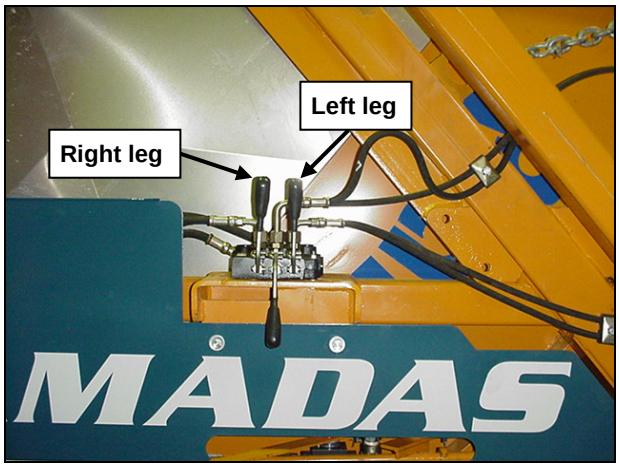


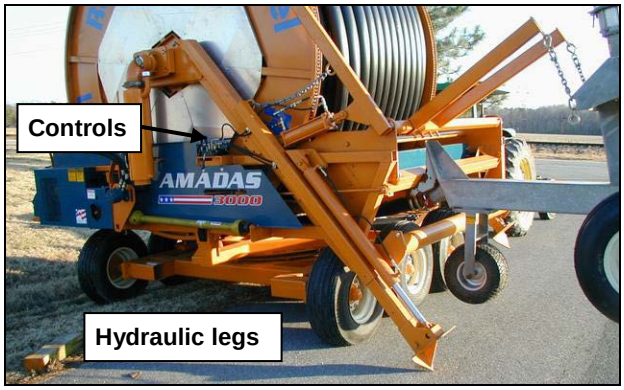
CAUTION

If you are using hydraulic legs, make sure the nut and bolt securing each hydraulic leg for shipping has been removed. Machine damage will result if an attempt is made to move the legs hydraulically with the shipping bolts in place.

For machines WITH the hydraulic kit:

2. Refer to the photo and raise each leg with the applicable handle.



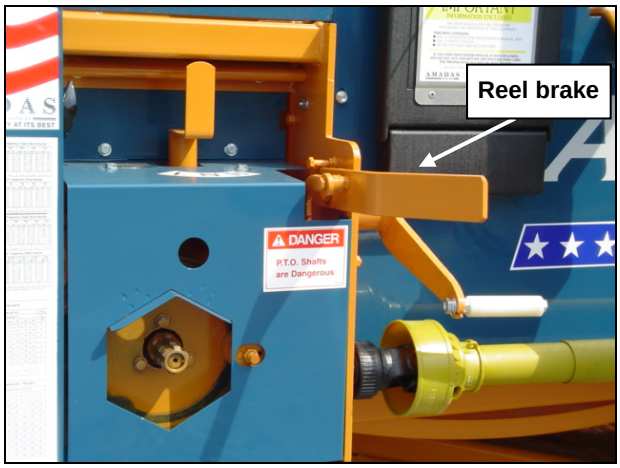


Ready Machine

1. Verify that transmission is in neutral.

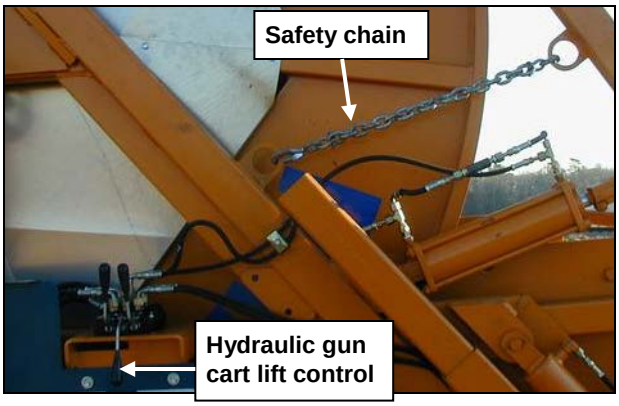


2. Disengage the reel brake by pulling the handle down until it is horizontal.



Set Up Gun Cart

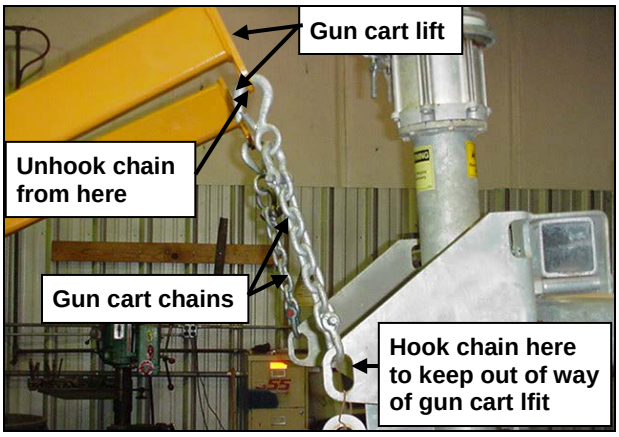
1. Raise the gun cart slightly and release the safety chain holding the gun cart in place. Use the winch handle to raise the gun cart if not equipped with hydraulics; if equipped with hydraulics, use the gun cart lift handle.





2. Lower the gun cart.

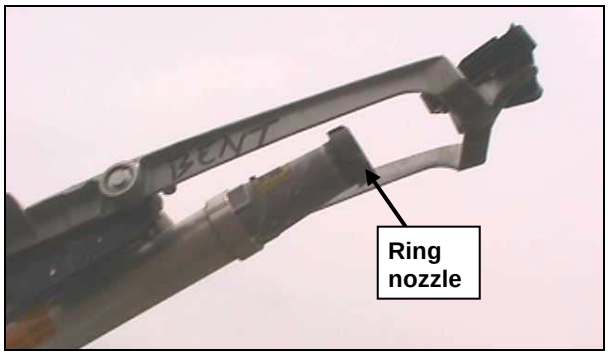
3. Disconnect the gun cart from the lift by unhooking each chain from the lift and hooking it into the gun cart.



4. Set the stops on the gun. Refer to the manual for the gun for specific information on setting stops and selecting a nozzle. A copy of the manual is included with your parts catalog.



5. Be sure the proper nozzle is installed in the gun.



6. Raise the gun cart lift so it is out of the way and will not be hit by the gun cart when it is reeled in.



Connect Hose

1. Connect the infeed hose to the machine inlet, using the clamp provided.



2. Position the opposite end as far away from the irrigator as possible.

NOTE! Do not connect the infeed hose to the water source at this time. Water will drain from the machine during pullout, which will make the hose easier to pull.

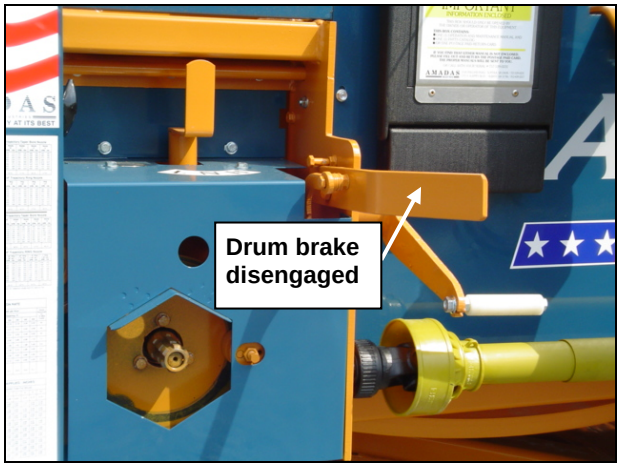


Pull Out Hose

1. Disconnect tractor from the irrigator.
2. Hook tractor up to gun cart.
3. Pull out the hose.

NOTE! *Make sure the drum brake is disengaged* (handle is horizontal; see photo). It is also important to remember the following when pulling out the hose.

- Do NOT exceed 2 MPH.
- Point the gun AWAY from the tractor.
- Leave at least 1 wrap of hose on the reel.
- Stop slowly to prevent or minimize backlash from the hose.



CAUTION

If backlash occurs, hose coils must be manually tightened before irrigation hose retrieval is started. Failure to eliminate the backlash will severely damage the hose.

4. Disconnect the gun cart from the tractor.
5. Reconnect the tractor to the irrigator.

Connect to Water Supply

1. Tighten the hose on the drum if necessary.

2. Connect the infeed hose to the water supply.



NOTE! For best performance, try to minimize the kinking of the infeed hose.

⚠ DANGER

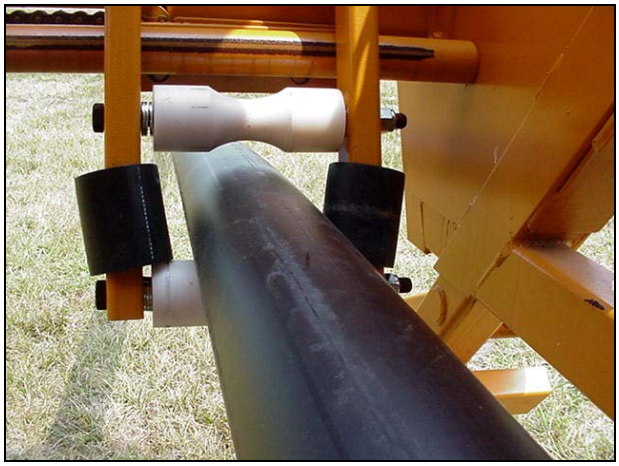
Do NOT position your body over riser. If pressure causes the riser to blow off, death or serious injury could occur.



Make Adjustments

Make the level wind adjustment to the machine timing the first time you pull the hose out on the irrigator. See “Level Wind Timing” in Chapter 5, *Adjustments*, for specific information on how to adjust the level wind timing.





Machine Operation

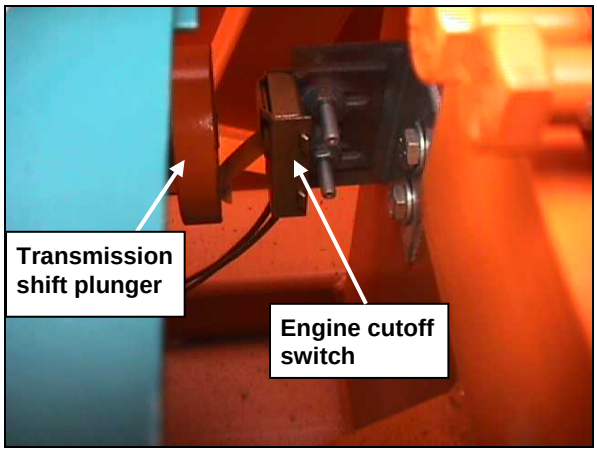
This section describes the procedures for using the gas drive and turbine drive versions of the Reel Rain. The information below, Cutoff Bar, is relevant to both types of drive.

Cutoff Bar

IMPORTANT! Make certain that the cutoff bar is pulled out away from the machine. If the bar is striking the transmission disengage, the transmission will not go into high or low range.

Test the cutoff bar:
With the machine running and the transmission engaged, push the automatic cutoff bar toward the machine. The Reel Rain should shift the transmission into neutral and stop the motor or turbine. If the transmission does not shift into neutral, lengthen the rod that engages the plunger. Test again. If the transmission shifts to neutral but the engine does not shut off, adjust the cutoff switch so that it trips to the normally closed position (out) when the plunger is depressed.



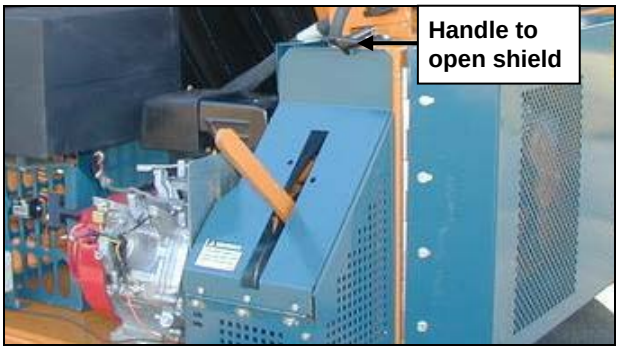


CAUTION

Do NOT operate the irrigator if the automatic cutoff does not shut the engine off. Serious machine damage will occur if the drum continues to rotate after the hose has been retrieved.

Gas Drive

1. Open the shield covering the drives.

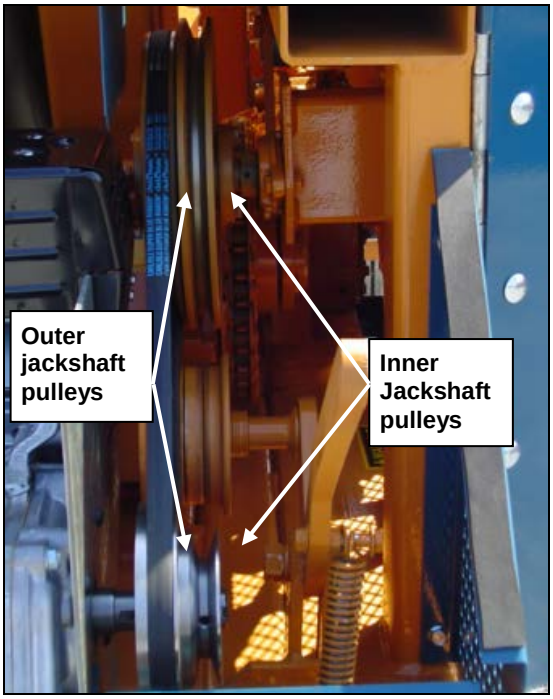


2. Refer to the drawing below, or “Charts” in Chapter 3, *Operation Overview,* to select the proper pulley.

3. Release the tension on the step cone drives by pushing the drive belt tensioner handle up.

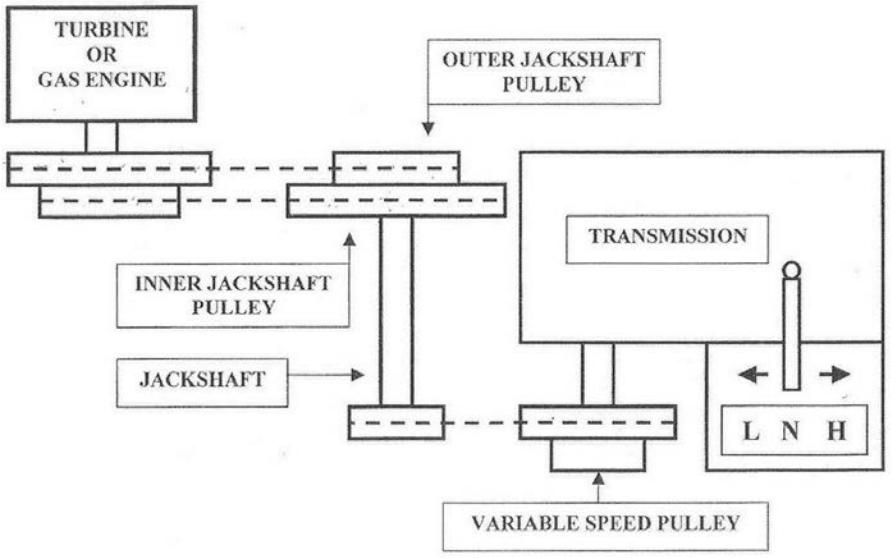


4. Place the belt in the selected groove.



5. Release the handle to re-tension the belt once the belt is in place.

6. Close the shield.



Gas Drive

7. Open the water supply valve gradually and allow the water to flow to the irrigator.

DANGER

Do NOT suddenly supply high pressure water to the system. Instead, allow the pressure to build up slowly. This will help avoid water hammer, which can rupture pipes, hoses, and/or seals. Failure to do so can cause death, serious injury, or significant damage to the machine.

8. Allow the gun to irrigate the land at the lane end. This is necessary to maintain even distribution of water over the entire length of the gun cart movement.

   Water is usually run for at least 10-15 minutes to prevent dry spots at the end of the field. Adjust the time for any other type of application as appropriate.

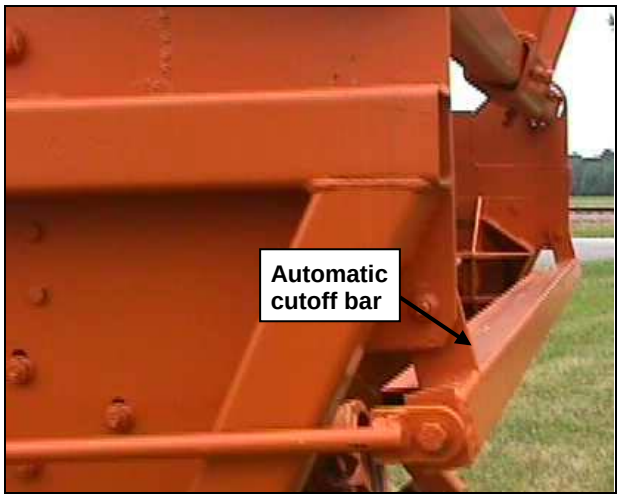
NOTE! Once the water is started, it continues running until the supply is shut off, even if the engine stops running.

9. Check the gas level in the gas tank and fill if necessary.

10. Check the oil level in the engine and fill if necessary.

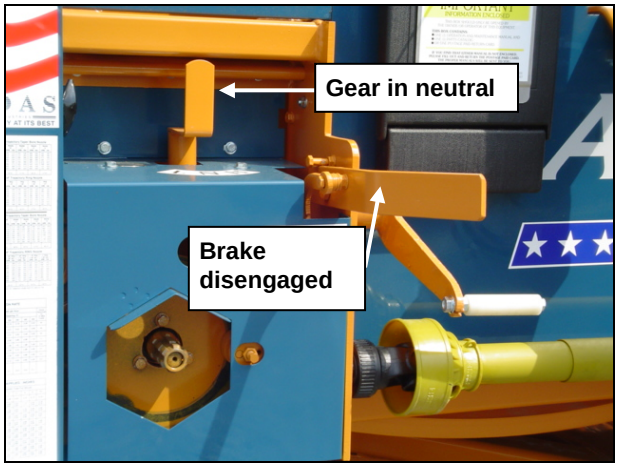
NOTE! The engine has an automatic shutoff that stops the engine if the oil level is too low. Refer to the engine manual for information on the engine.

11. Pull the automatic cutoff bar out toward the gun cart.



NOTE! If the automatic cutoff bar is not fully out, the engine will not start.

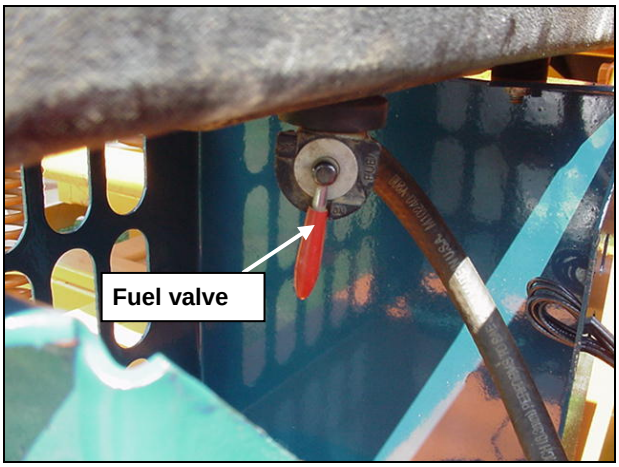
12. Verify that the transmission is in neutral. If it is not, engage the brake handle, place the transmission in neutral, and disengage the brake slowly.



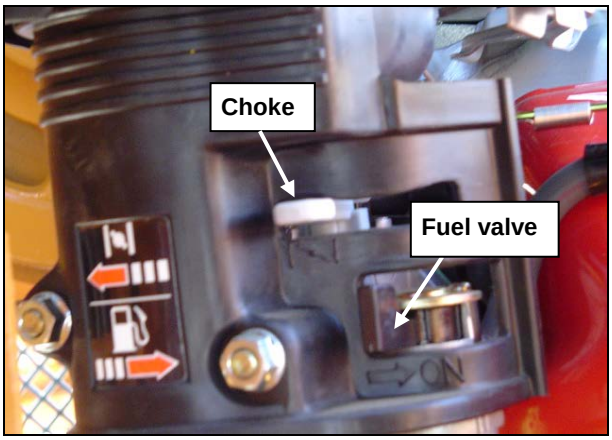
Gas Drive

Start the engine:

13. Open the fuel valve at the bottom of the gas tank.



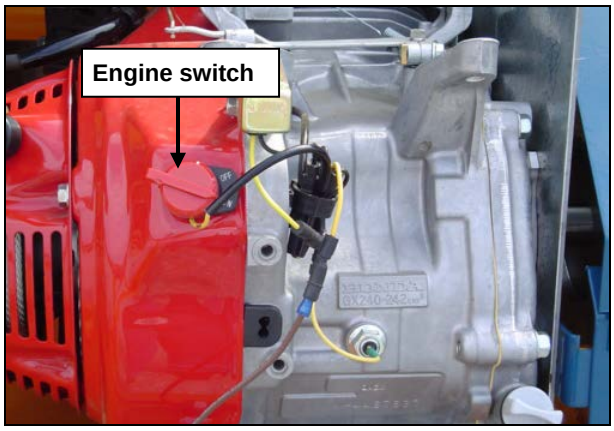
14. Turn the fuel valve on the engine to the "ON" position.



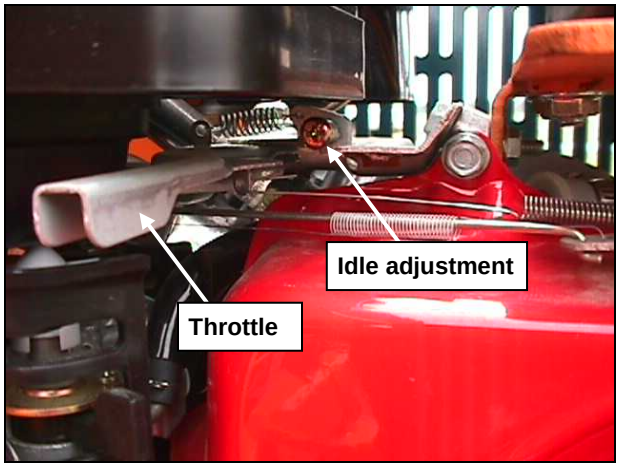
15. If the engine is cold, it may be necessary to turn the choke lever on or partially on.

16. Turn the engine ON/OFF switch to ON.

IMPORTANT! Do NOT exceed 3900 RPMs. Do NOT allow the engine to run at low RPMs for an extended period, as the spark plug will foul. Low RPMs should not be less than 2200 RPMs.



17. Adjust the engine throttle to approximately 1/2 throttle.

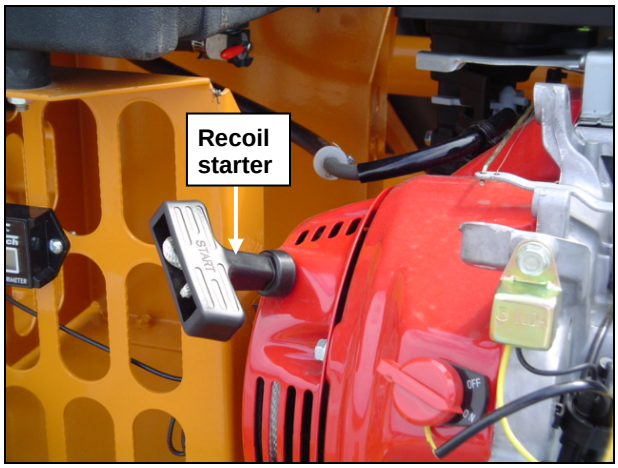


18. Choke the engine.

Gas Drive

19. Grab the recoil starter grip and pull briskly. Be sure to allow the recoil starter grip to return slowly. If the engine does not start, pull again.

NOTE! Do NOT allow the starter grip to snap back against the engine as damage to the starter could result.

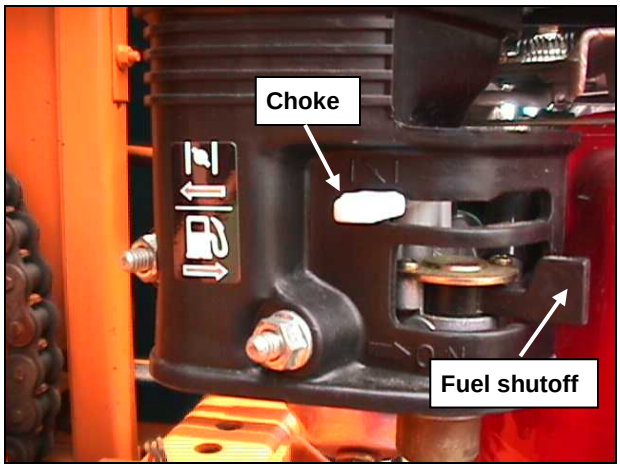


20. Release the choke as the engine warms up. Let the engine warm up several minutes prior to starting hose retrieval.

21. Adjust the engine to a low idle (1800 RPM or less).

22. Adjust the engine speed to obtain the desired hose retrieval speed.

NOTE! The run will terminate when the gun cart is pulled back in and the automatic cutoff bar has stopped hose retrieval. The automatic cutoff DOES NOT turn off water to the irrigator. You must shut off the water manually to prevent over-irrigation of the land at the lane end.



23. Shift the range lever into "H" (high) or "L" (low) range, depending on the desired retrieval speed.

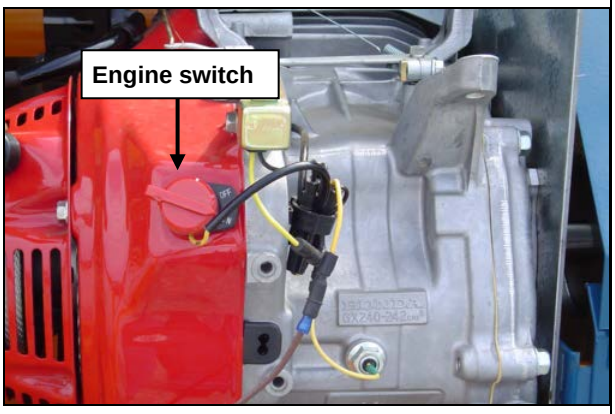
NOTE! You can select any hose retrieval speed between 1.25 foot per minute and 8 feet per minute, depending on the options you choose. Use the Hose Speed chart in the “Charts” section of the Chapter 3, *Operation Overview* (or on the Reel Rain) to determine the proper transmission and pulley settings for the speed desired.



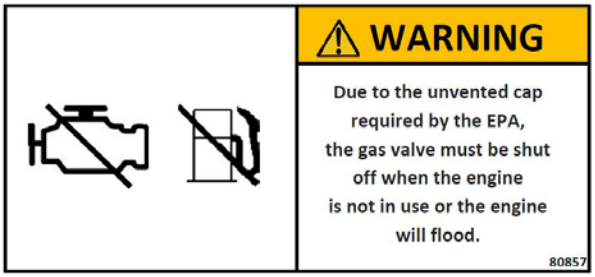
Change Gas Drive Speed Range

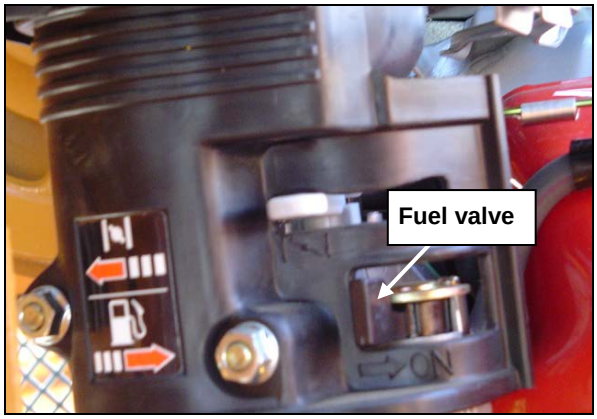
If it is necessary to change the speed range of the pulleys:

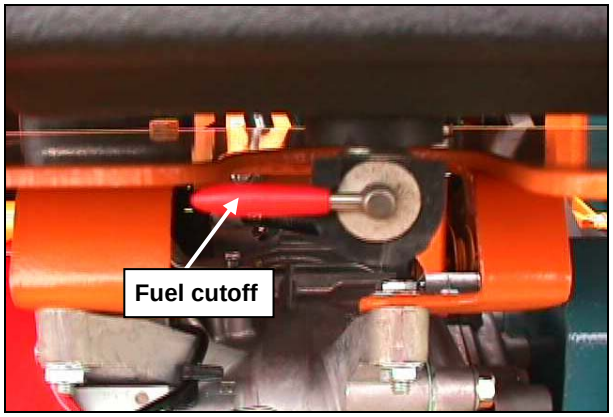
1. Shut off the engine.



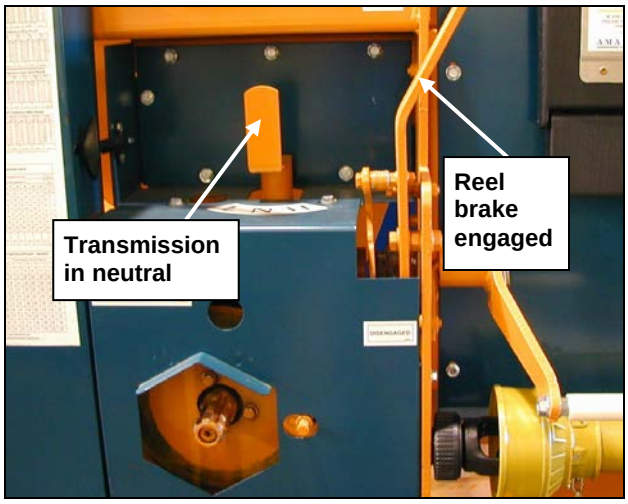
2. Turn off the fuel valve on the carburetor and fuel cutoff valve under the gas tank.







3. Engage the reel brake.



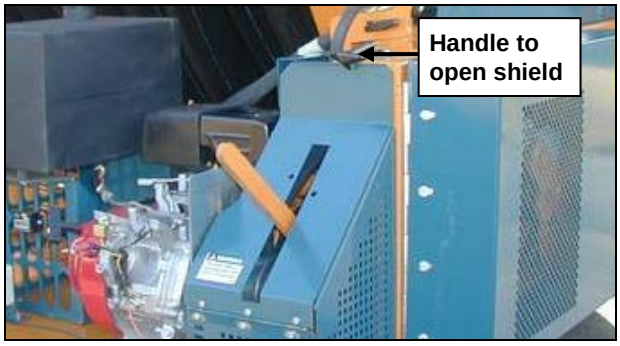
4. Shift the transmission to neutral.

5. Slowly release the reel brake to allow hose tension to dissipate by unwinding.

6. Engage the reel brake again.

Change Gas Drive Speed Range

7. Open the shield covering the drives.

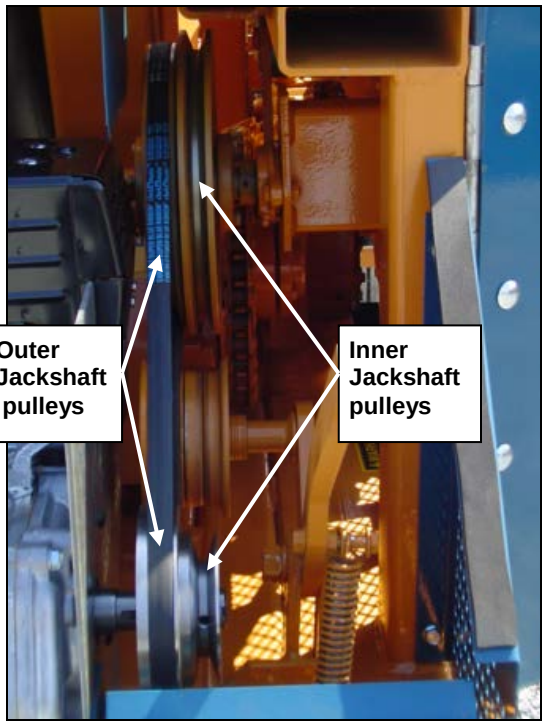


8. Select correct pulley ratio according to the diagram below.

9. Release tension on the step cone pulley belt by pushing up the drive belt tensioner.

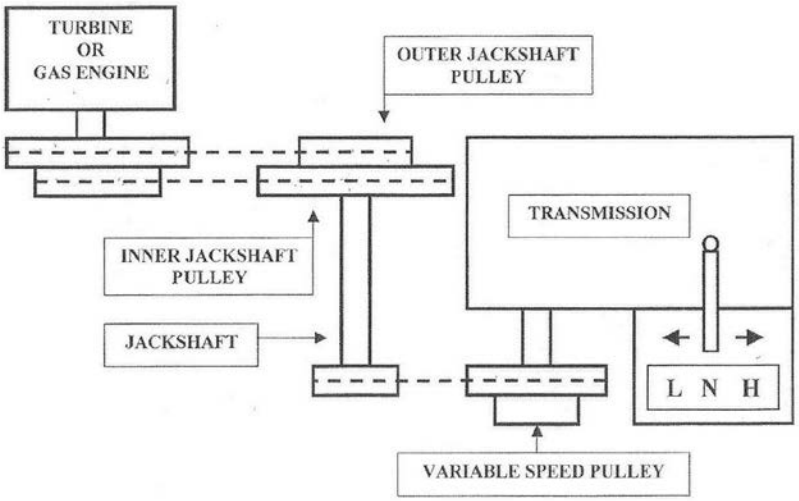


10. Place the belt in the selected groove.



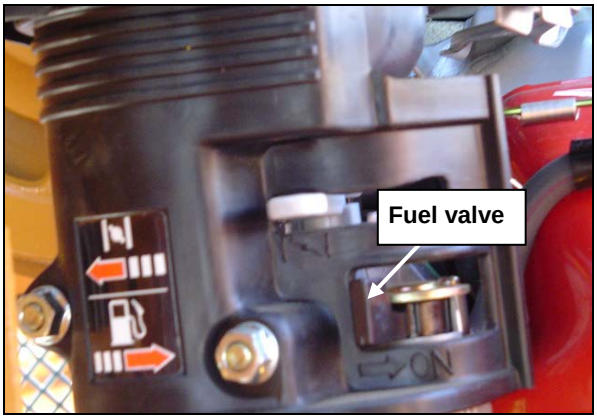
11. Reapply tension to the belts by releasing the drive belt tensioner handle.

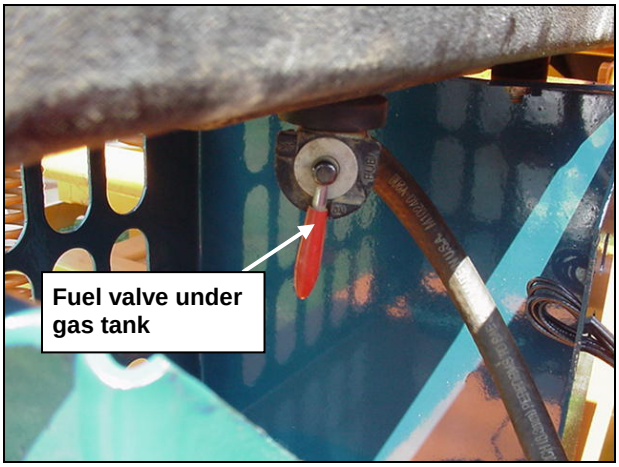
12. Close the shield.



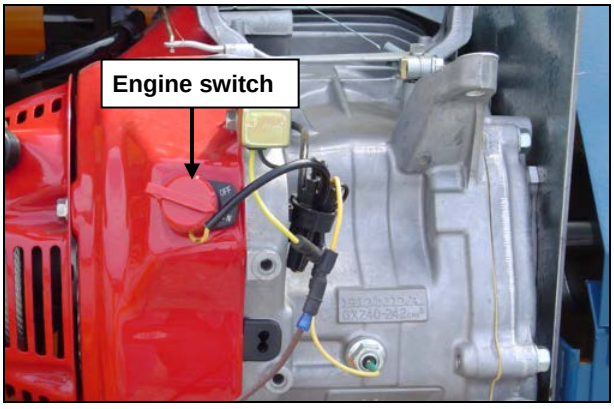
Change Gas Drive Speed Range

13. Turn ON the fuel valve on the carburetor and open the fuel valve under the gas tank.

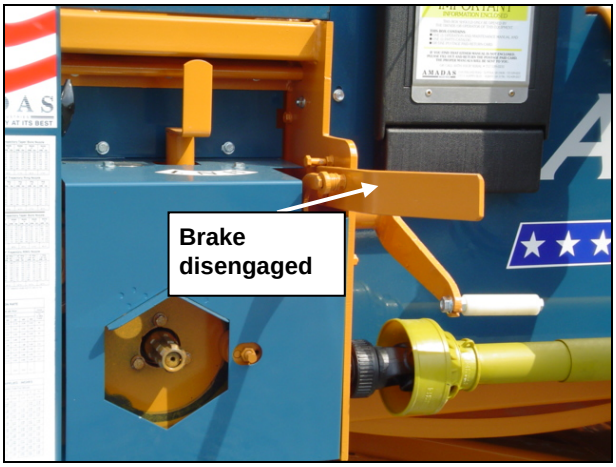




14. Restart engine; run at low idle.



15. Disengage the reel brake.

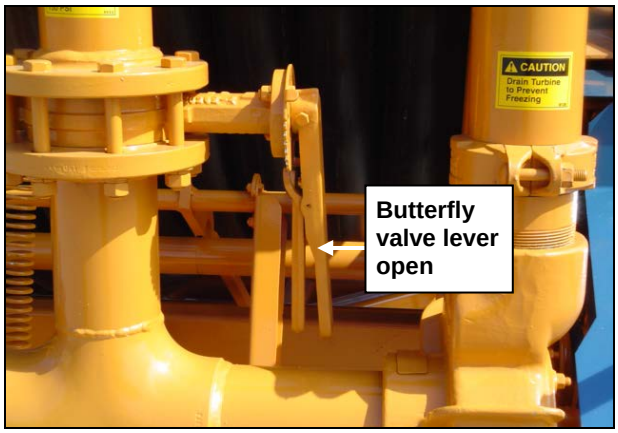


16. With the engine still running at idle, shift the transmission into the desired range (high or low).

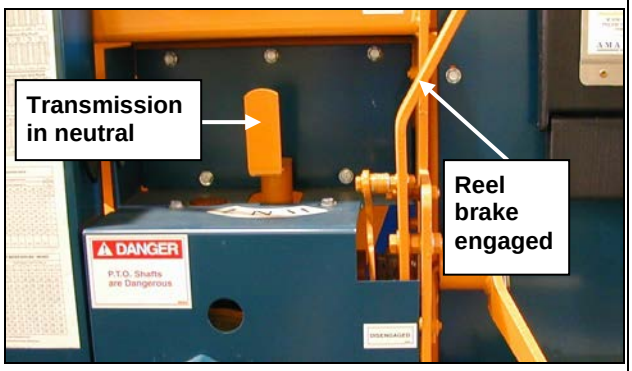


Turbine Drive

1. Shut off the turbine by opening the butterfly valve.



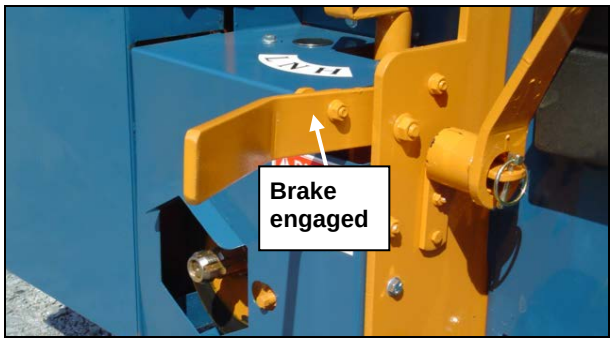
2. Engage the reel brake.



3. Shift the transmission to Neutral.

4. Slowly disengage the brake by pulling it down to allow hose tension to dissipate by unwinding.

5. Engage the brake again.



6. Open the water supply valve gradually and allow the water to flow to the irrigator.

7. Allow the gun to irrigate the land at the lane end. This is necessary to maintain the even distribution of water over the entire length of the gun cart movement.

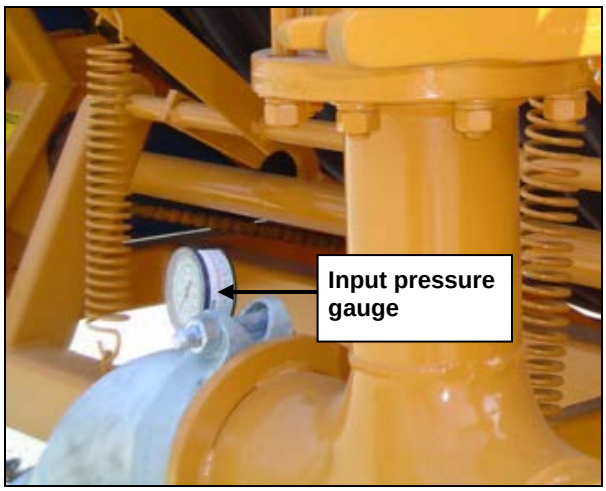
   Water is usually run for at least 10-15 minutes to prevent dry spots at the end of the field. Adjust the time for any other type of application as needed.

NOTE! Once the water is started, it continues running until the supply is shut off, even if the turbine stops running.

⚠ DANGER

Do NOT suddenly supply high pressure water to the system. Instead, allow the pressure to build up slowly. This will help avoid water hammer, which can rupture pipes, hoses, and/or seals. Failure to do so can cause death, serious injury, or significant damage to the machine.

Do **NOT** exceed 150 PSI at inlet plumbing; check the input pressure gauge.

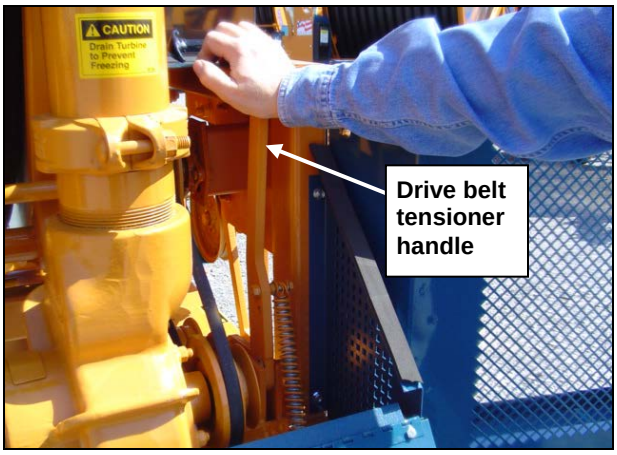


8. Open the shield covering the pulleys.

Turbine Drive

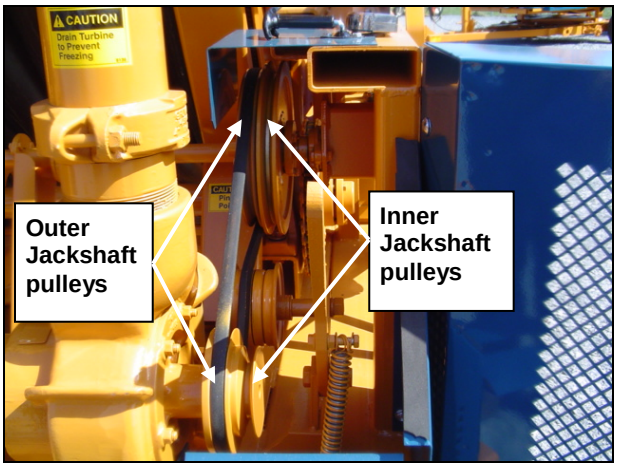


9. Disengage the drive belt tensioner for the step cone pulley belt by pushing the handle up.



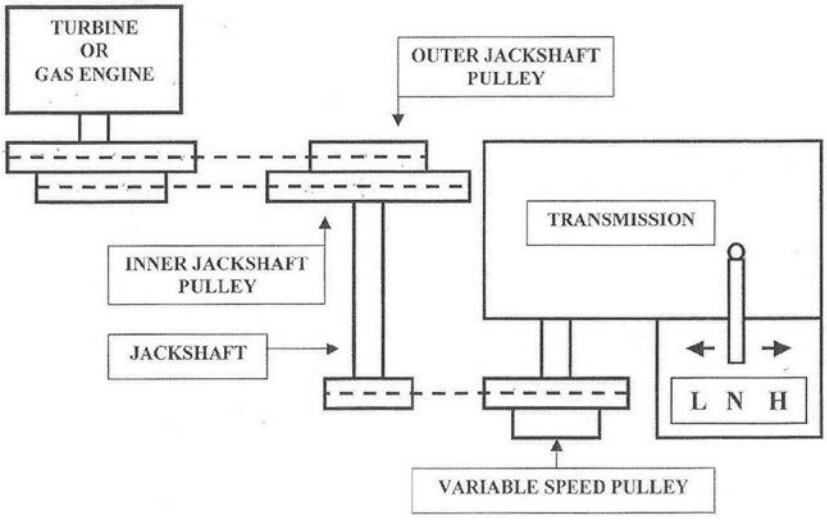
10. Select the correct pulley ratio. See the Hose Speed chart in the "Charts" section of Chapter 3, *Operation Overview* and drawing below.

11. Place the belt in the selected groove.



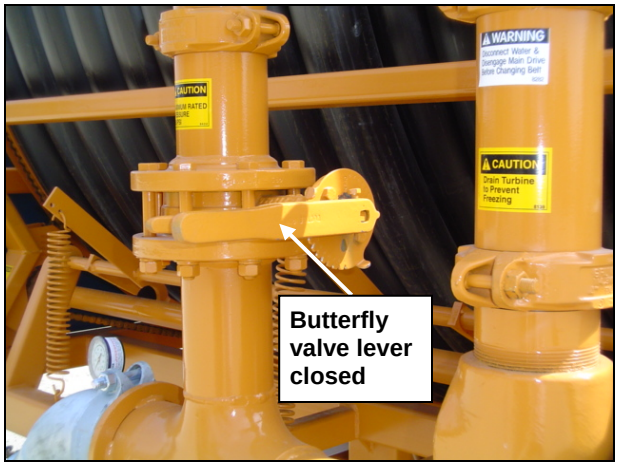
12. Engage the drive belt tensioner by releasing the handle.

13. Close the shield.



Turbine Drive

14. Slowly close the butterfly valve until the turbine begins to turn.



15. As the turbine begins to turn, shift the transmission to the desired range.

NOTE! You can select any hose retrieval speed between 1 foot per minute and 6 feet per minute, depending on the options you choose.

16. After the transmission is engaged, close the butterfly valve until the desired ground speed is achieved. The digital speed readout displays the hose retrieval ground speed.



NOTE! The run will terminate when the gun cart is pulled back in and the automatic cutoff bar has stopped hose retrieval. The automatic cutoff DOES NOT turn off water to the irrigator. You must shut off the water manually to prevent over-irrigation of the land at the end of the run.

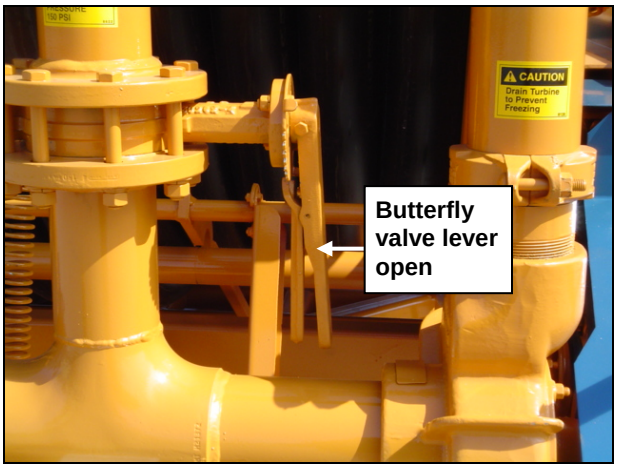
⚠ CAUTION

Make certain that the automatic cutoff bar is pulled out away from the machine or the transmission will not go into gear.

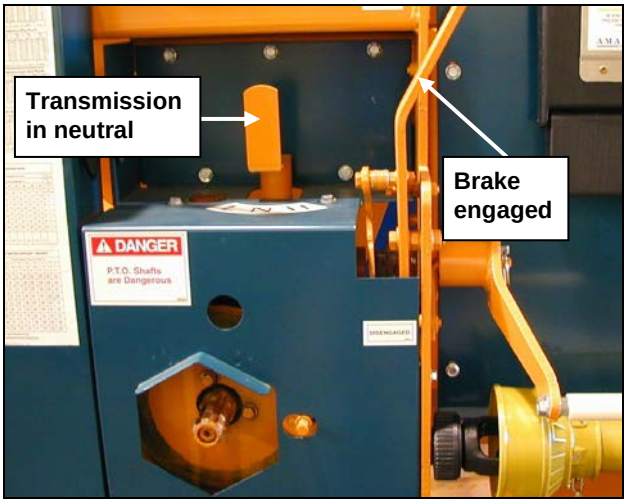
If you are able to change gears with the bar pushed in, the cutoff bar is not working. Do NOT operate the irrigator if the automatic cutoff does not shut the turbine off. Serious machine damage will occur if the drum continues to rotate after the hose has been retrieved.

Change Turbine Drive Speed Range

1. Shut off the turbine by opening the butterfly valve.



2. Engage the reel brake.

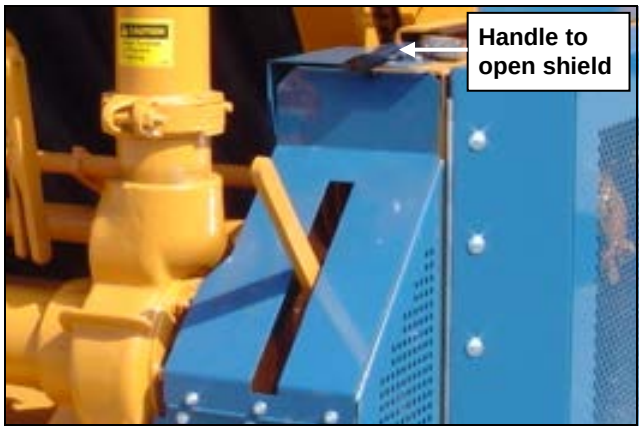


3. Shift the transmission to Neutral.

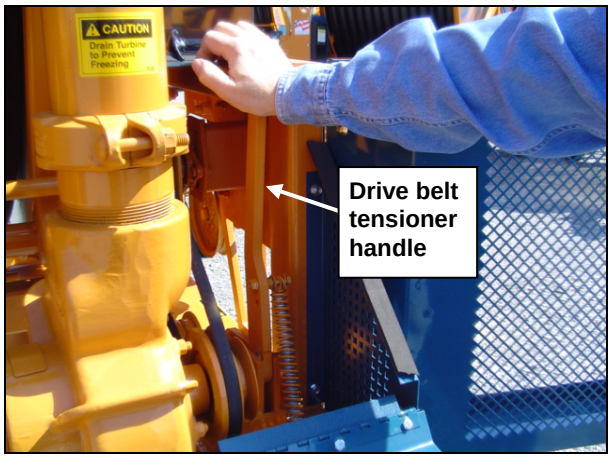
4. Slowly disengage the brake by pulling it down to allow hose tension to dissipate by unwinding.

5. Engage the brake again.

6. Open the shield covering the pulleys.



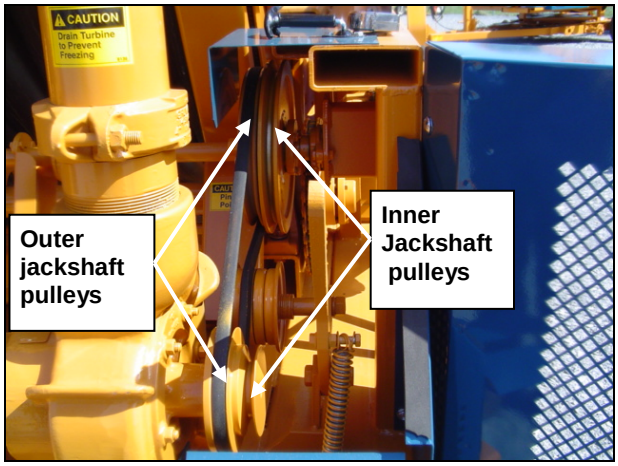
7. Disengage the drive belt tensioner for the step cone pulley belt by pushing the handle up.



Change Turbine Drive Speed Range

8. Use the Hose Speed chart in the “Charts” section of Chapter 3, *Operation Overview* and diagram below to select the pulley.

9. Place the belt in the correct pulleys.



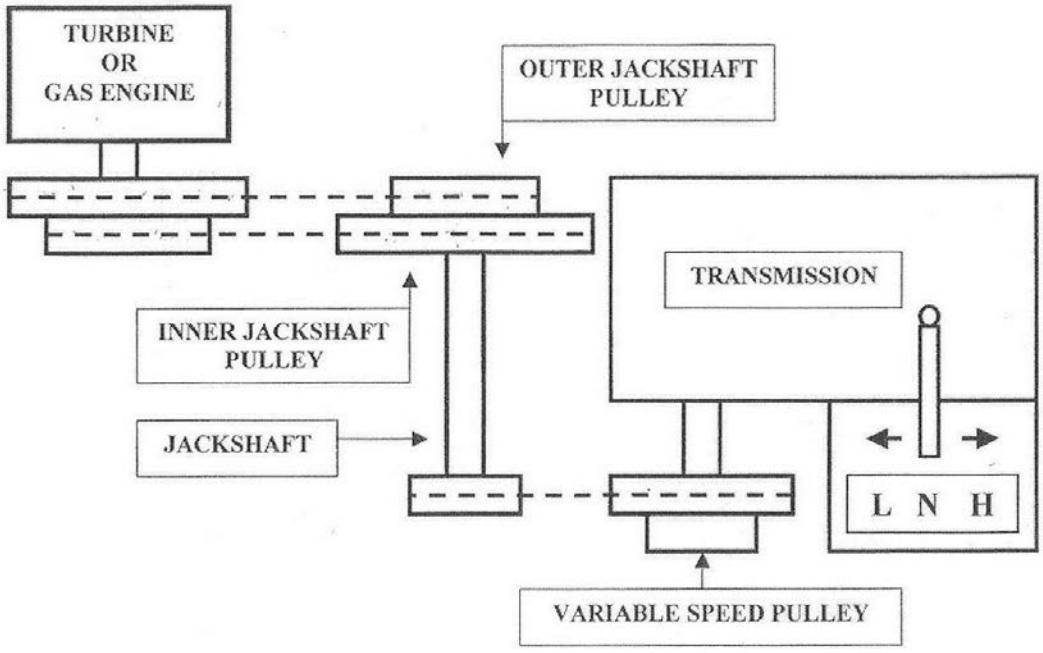
10. Engage the drive belt tensioner by releasing the handle.

11. Close the shield

12. Slowly close the butterfly valve.

13. As the turbine begins to turn, shift the transmission to the desired range.



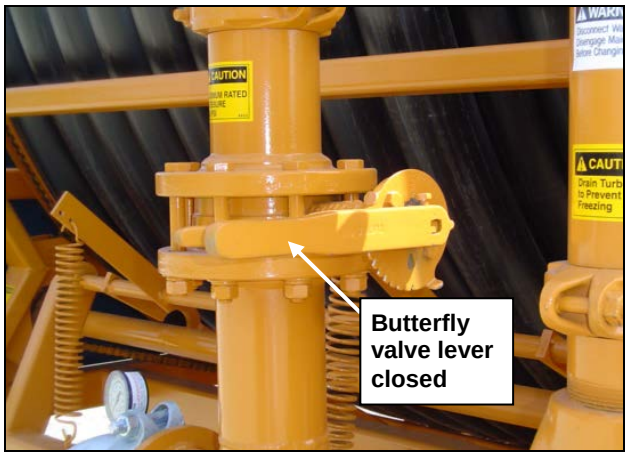


Change Turbine Drive Speed Range,

NOTE! You can select any hose retrieval speed between 1 foot per minute and 6 feet per minute, depending on the options you choose. Speed may be limited by water flow rate.



14. After the transmission has been engaged, close the butterfly valve until the desired ground speed is achieved.



Terminating the Run

The time needed to complete a run depends on the retrieval speed and hose length. Usually, the run is terminated when the gun cart has been pulled all the way in and the automatic cutoff bar has stopped the hose retrieval.

If you choose to stop the irrigator before the gun cart is all the way in, you can use the PTO shaft to rewind the remaining hose. Instructions for using the PTO shaft to rewind the hose begin on page 77. The procedure for ending a run starts on page 72.

End the Run

1. Allow the gun to irrigate the land at the lane end. This is necessary to maintain even distribution of water over the entire length of the gun cart movement.

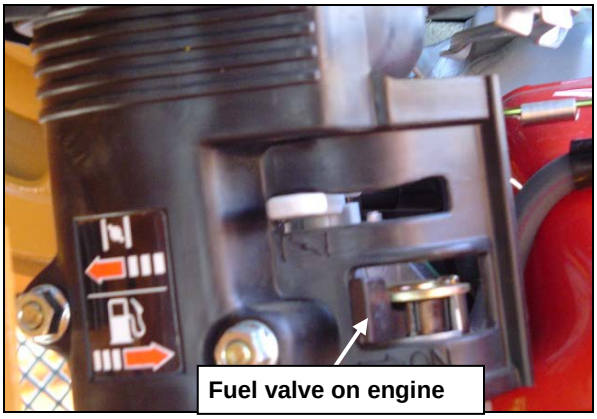
   Water is usually run for at least 10-15 minutes to prevent dry spots at the end of the field. Adjust the time as necessary.

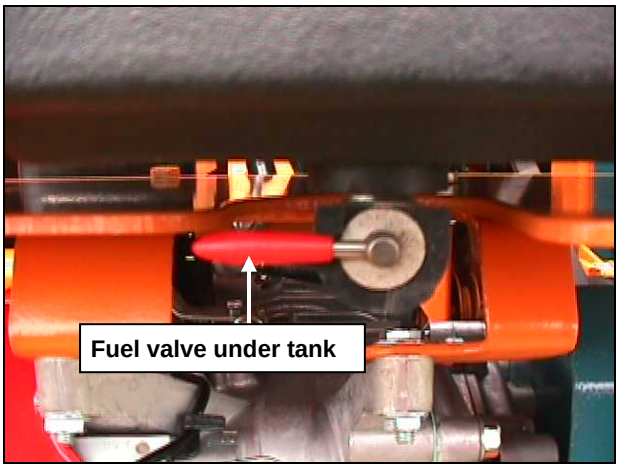
CAUTION

During normal operation, the automatic cutoff bar stops the hose retrieval once the gun cart is pulled all the way in. This prevents damage to the machine from over winding. The automatic cutoff bar does NOT turn off the water. The water must be shut off manually to prevent over-irrigation of the land at the lane end.

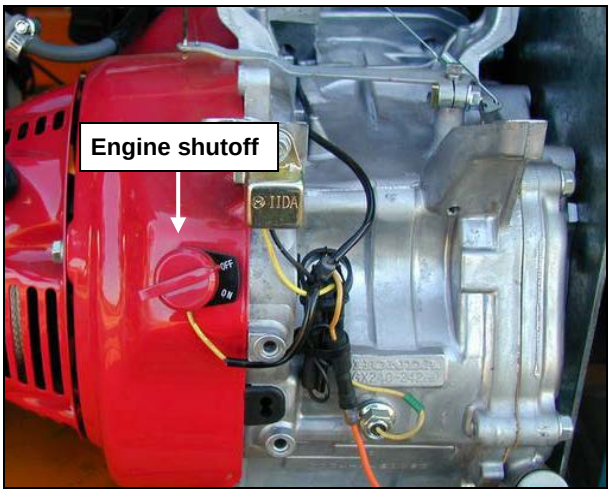
<u>If equipped with an engine</u>:

2. Turn off the fuel valve on the engine and close the fuel valve under the tank.





3. Turn the engine on/off switch to OFF.



End the Run

For both turbine and engine machines:

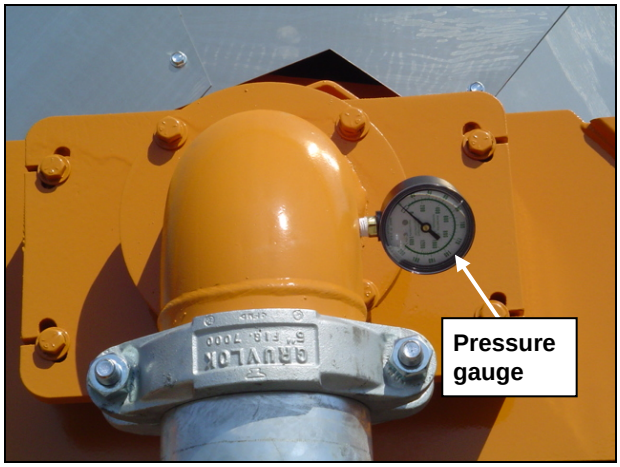
4. Close the riser valve to shut off the water to the irrigator after the water pressure source has been cut off.

⚠ DANGER!

Do NOT position your body over riser. If pressure causes the riser to blow off, death or serious injury could occur.



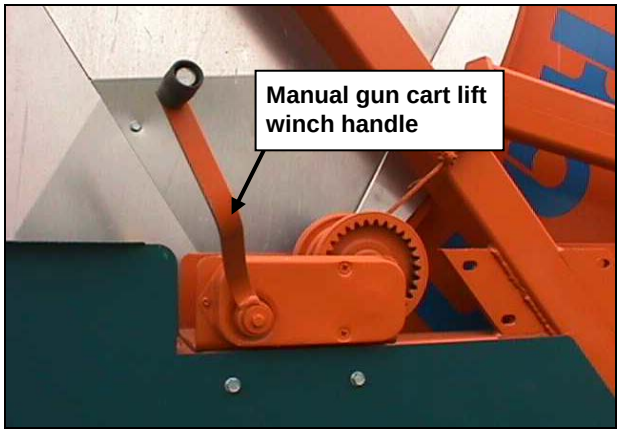
5. Check the pressure gauge. When the water pressure falls to 0 (zero), disconnect the infeed hose from the machine and water source.

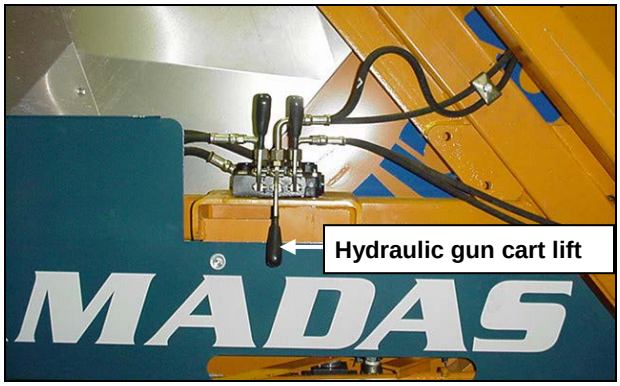


6. Roll the infeed hose up and store in the machine tongue.



7. Lower the gun cart using the winch, or hydraulic lever, if equipped with hydraulics.





End the Run

8. Connect the gun cart lift to the gun cart chains.



9. Raise the gun cart.

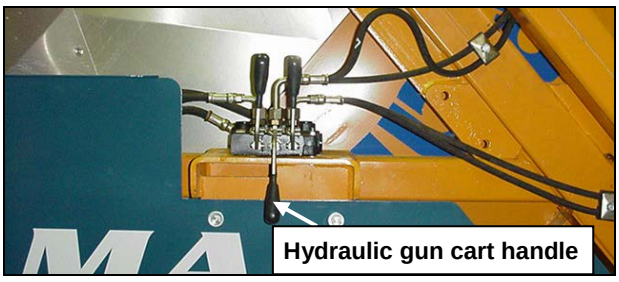
   A. Unclip the safety latch hook on the gun cart lift arm and lower the cable.
   B. Attach the hooks to the gun cart.
   C. Crank the gun cart up with the winch. If equipped with hydraulic legs and gun cart lift, use the bottom lever to raise the gun cart.
   D. Latch the safety chain to the frame.



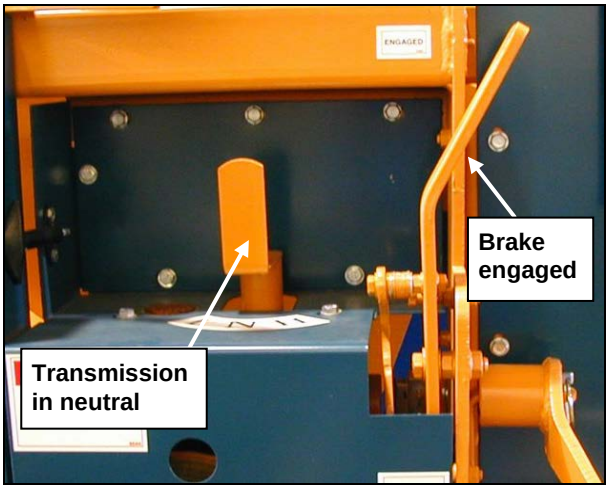
10. Secure the safety latch.

11. Lower the gun cart using the winch handle (or hydraulic handle, if equipped with hydraulics) so that the safety chain is carrying the load.





12. Engage the brake on the gearbox. This will prevent the hose from backlashing during transport.



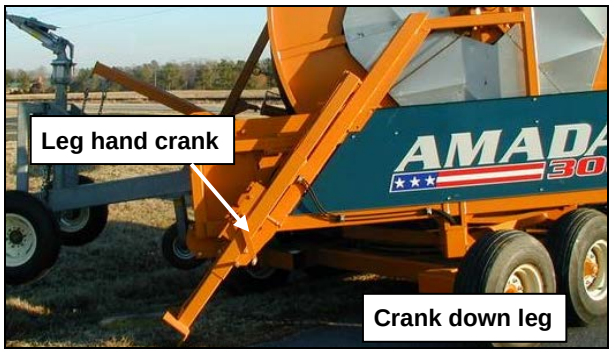
13. Raise the stabilizer legs as appropriate for your type

   - If throw down legs, remove pin, fold up leg, and replace pin for each leg.
   - If crank down legs, use hand crank to raise legs completely.
   - If equipped with hydraulics, use the hydraulic controls to raise the legs.

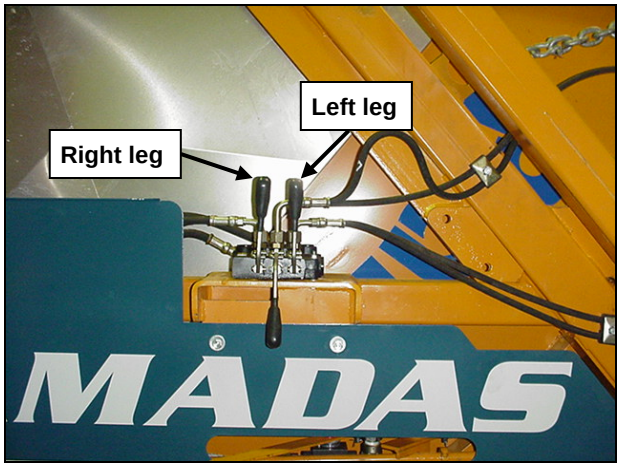
End the Run

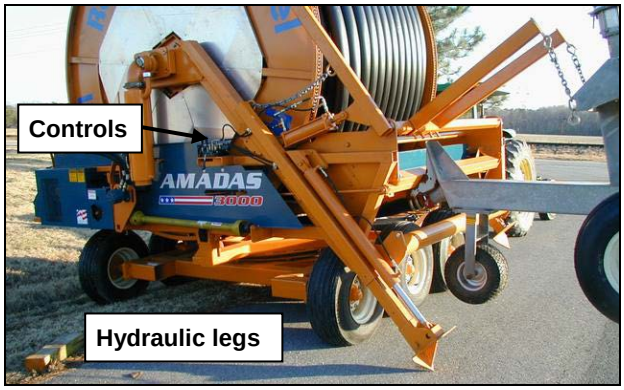
CAUTION

Pinch Point! Never allow your limbs or fingers to get between the leg and the Reel Rain frame. Injury could occur if limbs or fingers are pinched between the leg and framework.





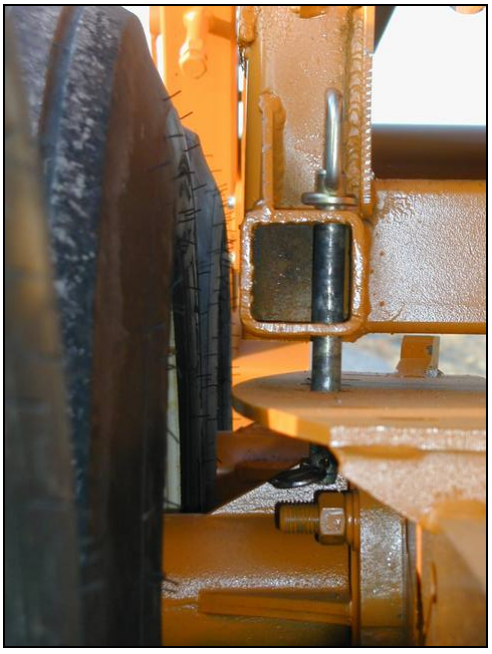




14. Rotate the machine if required.

A. Remove the pin securing the turntable.
B. Rotate the turntable so that the sides of the drum reel are parallel to the wheels.
C. Replace the pin securing the turntable.

NOTE! Step 14 is not applicable for the C1400.

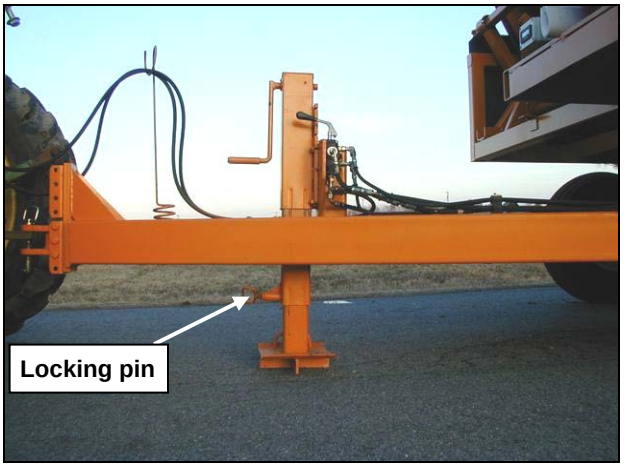


End the Run

15. Drive the tractor to the front of the irrigator and hook the Reel Rain to the tractor drawbar.

16. Raise the jack.

    A. Pull spring loaded locking pin .
    B. Slide the telescoping shoe up into the jack.
    C. Release the spring loaded locking pin.



17. Move the machine to the next site to be irrigated (see “Towing” at the beginning of this chapter).

CAUTION

Always attach a safety chain from the Reel Rain to the towing vehicle when you transport the irrigator.

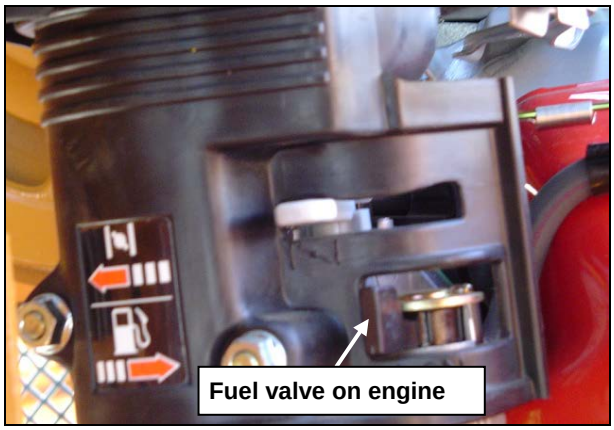
Rewind Hose with PTO Shaft

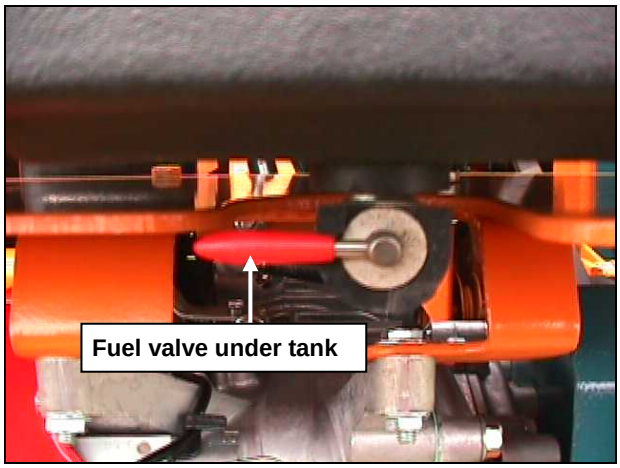
These instructions are necessary only if you choose not to allow the gun cart to be completely pulled in by the Reel Rain drive system.

NOTE! When you wind up the hose with PTO rewind, it is desirable to have water pressure in the hose. The water pressure in the hose prevents the hose from becoming oval in shape and affecting the level wind timing. If rewound without pressure, manual realignment of the hose may be required.

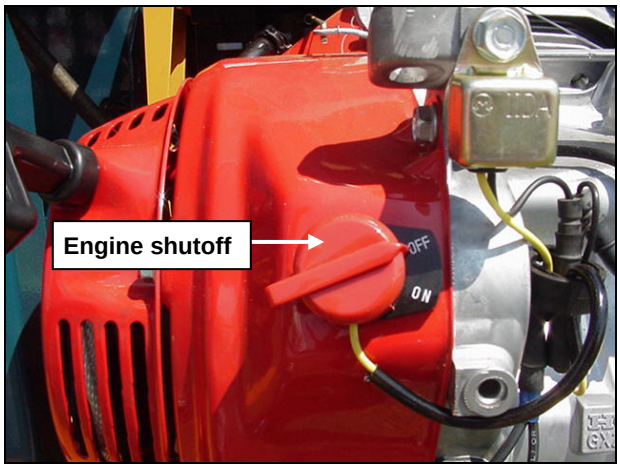
<u>If equipped with an engine</u>:

1. Turn off the fuel valve on the engine and close the fuel valve under the tank.



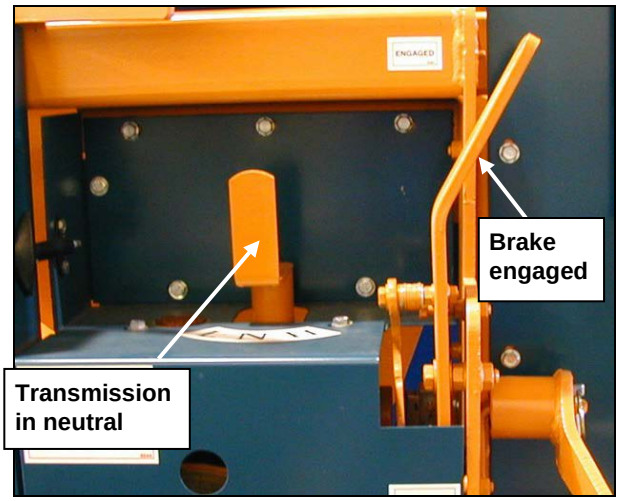


2. Turn the engine on/off switch to OFF.



3. Engage the reel brake.

4. Move the transmission gear to neutral.



5. Pull the handle down to disengage the brake mechanism, slowly allowing the hose to unwind slightly and dissipate any tension in the hose.

Rewind Hose with PTO Shaft

6. Remove the PTO shaft from its storage bracket on the front of the irrigator.



7. Connect the PTO shaft to a standard tractor with 545 RPM PTO speed.

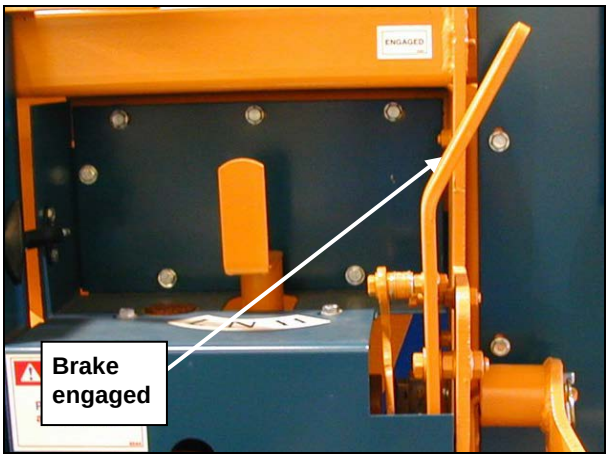
CAUTION

Do NOT operate above 1/3 PTO speed.

Do NOT use a PTO shaft with less than a four foot collapsed length. Using a shorter PTO shaft can cause damage to the gearbox.

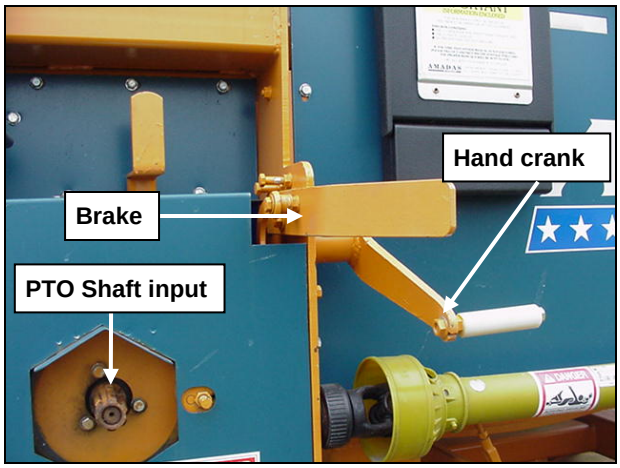
8. When the gun cart is approximately 20 feet from the irrigator, disengage the drive to the PTO shaft and shut off the tractor.

9. Engage the reel brake.

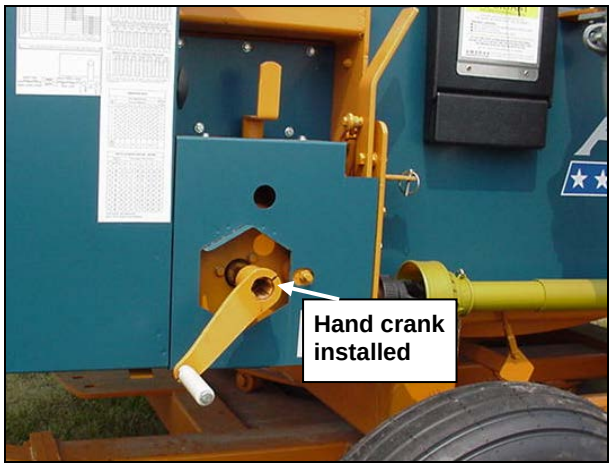


10. Push the reel brake down to disengage.

11. Remove the PTO rewind hand crank from its storage location; replace the clip.



12. Install the PTO rewind hand crank in the PTO shaft input.



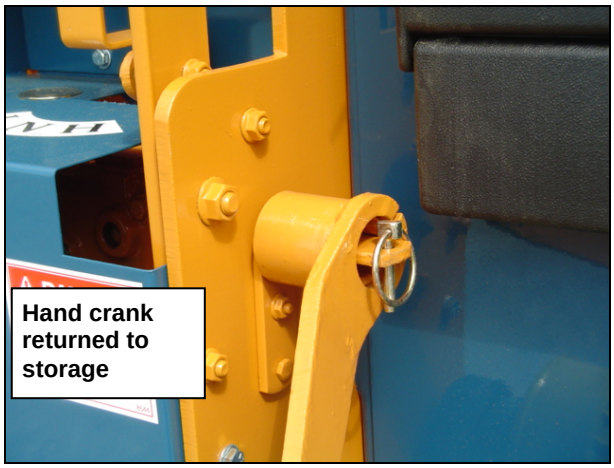
13. Finish rewinding the hose using the hand crank.

Rewind PTO with Hand Crank, Continued

14. Remove the hand crank and return it to its storage place.

CAUTION

The machine cutoff will not stop the drum rotation when rewound with a tractor PTO.



Hand crank returned to storage

NOTES

5. Adjustments

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Overview

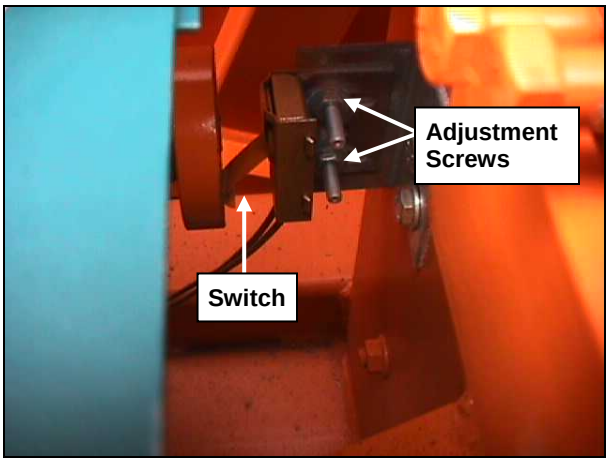
This chapter provides information for making basic adjustments on the Reel Rain after it is put into operation. Adjustments needed to set up the Reel Rain initially are described in the Chapter 2**,** *Preparation*.

Information needed to set up and run the Reel Rain is provided in Chapter 4, *Setup and Operation*. Chapter 6, *Maintenance*, contains information for lubrication, maintenance, and storage of the Reel Rain.

Automatic Shutoff

When the automatic cutoff bar is pushed in, the Reel Rain engine or turbine automatically stops. If the shutoff bar does not work on engine models, adjust or replace the switch (see photo). On turbine models, be certain that the main valve is opening completely.

NOTE! The water flow is not stopped by the automatic shutoff bar. You must manually turn off the water supply to stop the water.



Compensation Adjustment

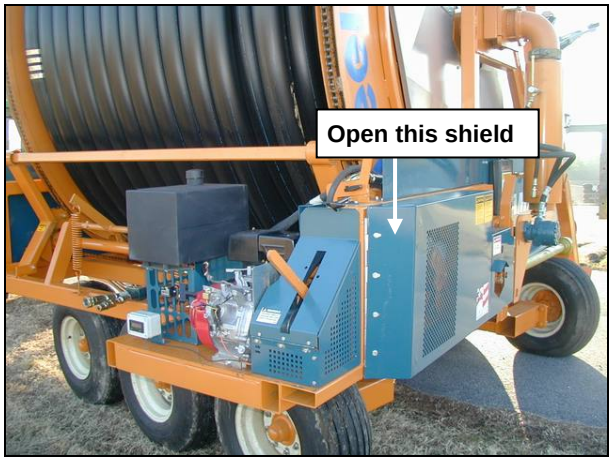
The compensation system automatically controls the retrieval speed of the hose to within a few percentage points of the original set speed over the course of the run. This compensation is necessary as the hose layers build up on the drum reel and the diameter of the drum increases. It automatically slows the drum down to maintain a consistent rate of hose speed retrieval.

The compensation system consists of a sensor bar that determines the number of layers of hose on the reel and a variable speed pulley assembly that automatically adjusts the speed of hose retrieval.

1. Pull the hose out 20 feet.

2. Pull the cutoff bar out.

3. Open the shield covering the compensation assembly. This is located on the left side of the machine as you face the gun cart side of the Reel Rain.

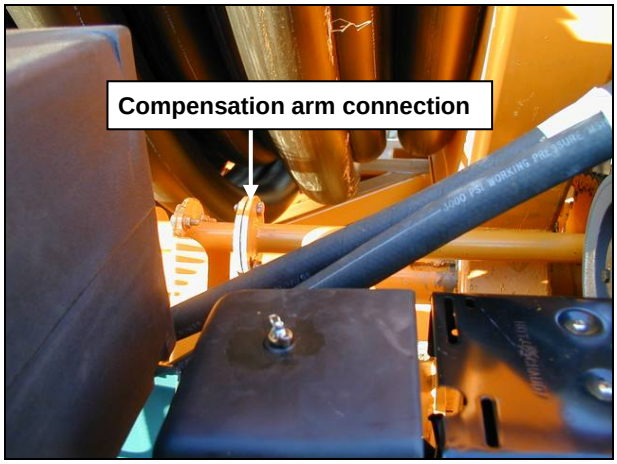


NOTE! All four layers of hose need to be on the drum when you make the adjustment, so make sure the hose is fully wound on the drum before you set the idler.

4. The top of the drive belt should be approximately 1/8 of an inch from the outside of the variable speed sheave. If the distance is greater than this, release tension by moving the idler down. If it is less, move the idler up to increase tension.



5. If there is a drastic difference in belt position, it may be necessary to readjust the compensation arm connection where shown.

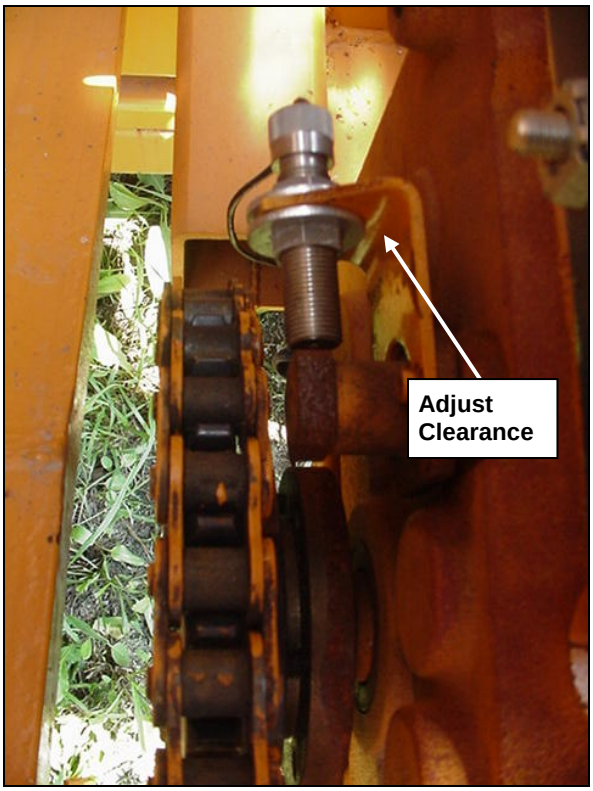


Digital Speed Readout

The digital speed readout on the turbine Reel Rain uses a magnetic pickup to measure the hose speed. Over time, the magnetic pickup gap may need adjustment.

To adjust the magnetic pickup gap:

Measure the gap between the tooth of the sensor target and the magnetic pickup head. The gap should be between 1/16 and 1/8". If the gap is not correct, loosen the pickup assembly and lock nut. Adjust as necessary.

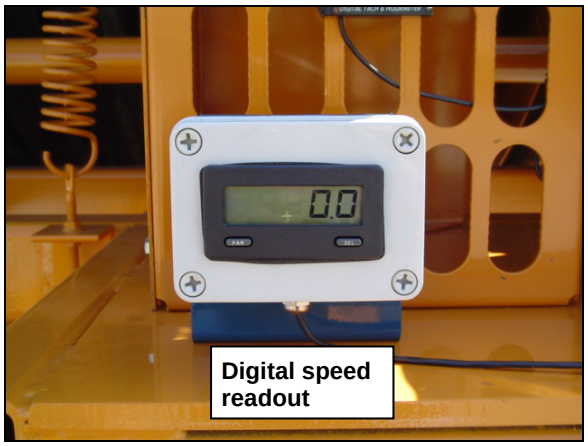


If the digital assembly becomes dim:

Remove and replace the batteries.

If readings are incorrect:

Remove the cover of the digital readout unit and check the settings. (See next page).



Tachometer Programming Instructions

The tachometer for your machine has been fully programmed at the factory. However, *if you have a replacement tachometer*, program the new tachometer using the instructions included with it in the packaging. Instructions can also be found on the AMADAS website as follows:

1. Go to www.amadas.com
2. From the AMADAS home page, select **Product Catalogs and Manuals**
3. From the Product Catalogs and Manuals page, select **Technical Bulletins**
4. Select **Tach Programming for Diggers/Irrigators (Form 0366; Part #16395)**

IMPORTANT! Do NOT program your tachometer UNLESS you have received a replacement from AMADAS Industries. Tachometers on new machines are fully programmed at the factory and attempting to re-program them may cause errors.

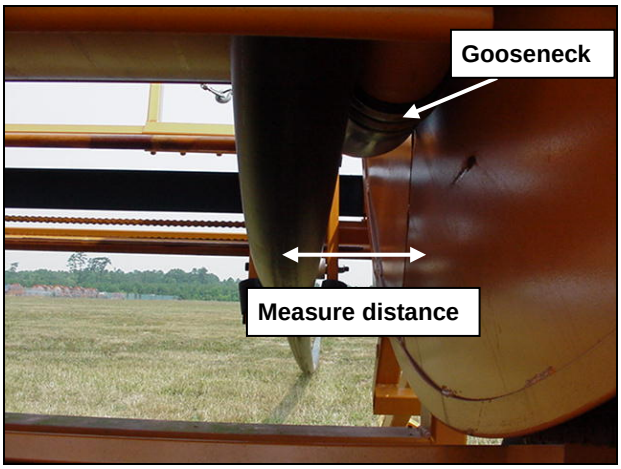
Level Wind Timing

The level wind timing must be properly adjusted for the hose to coil back on the reel correctly. Check the timing when you use the Reel Rain for the first time and at least once every three months.

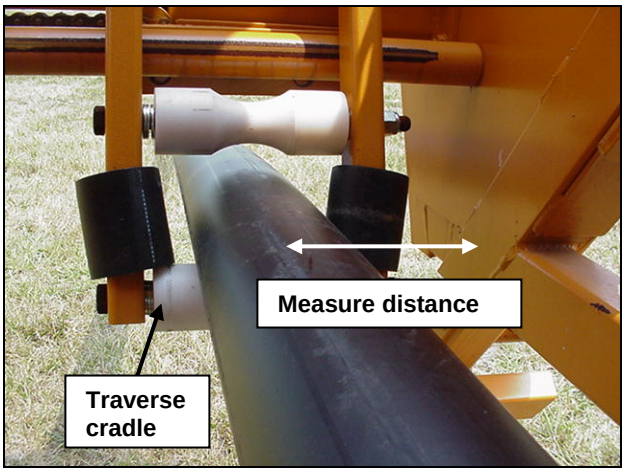
To adjust the level wind timing:

1. Pull the hose out until only one coil remains on the drum reel and the goose neck is on the bottom.

2. Push the hose coil tightly against the side of the goose neck and measure the distance from the inside edge of the drum reel to the center of the hose next to the goose neck.



3. Measure the distance from the inside edge of the drum reel to the center of the traverse cradle. The center of the traverse cradle should be ¼ " closer to the edge of the drum reel than the hose center at the gooseneck.

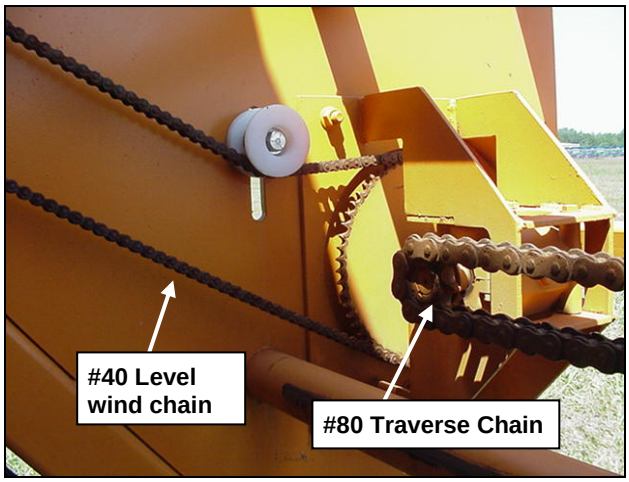


Level Wind Timing

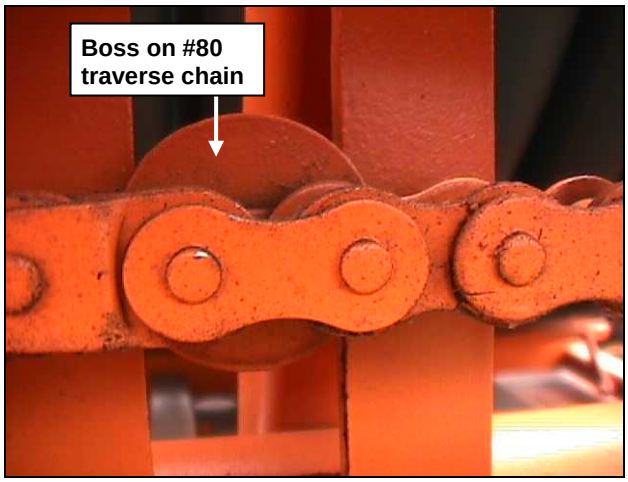
4. Adjust the traverse cradle as follows:

   a. Remove the #40 level wind drive chain that drives from the drum center to the level wind gearbox.





   b. Adjust the traverse cradle so that the center of the hose is ¼ " closer to the reel side than the hose is at the gooseneck (refer to photos on previous page). Be certain that the boss on the #80 traverse chain is on the lower loop of the chain when the hose is pulled out to the last coil. (You may have to adjust the length the hose is pulled out to move the chain to the correct position.)



   c. Check the measurement and re-adjust if necessary.
   d. Replace the level wind drive chain.

Stabilizer Legs

Three stabilizer leg options are available with the Reel Rain. This section describes each type of leg.

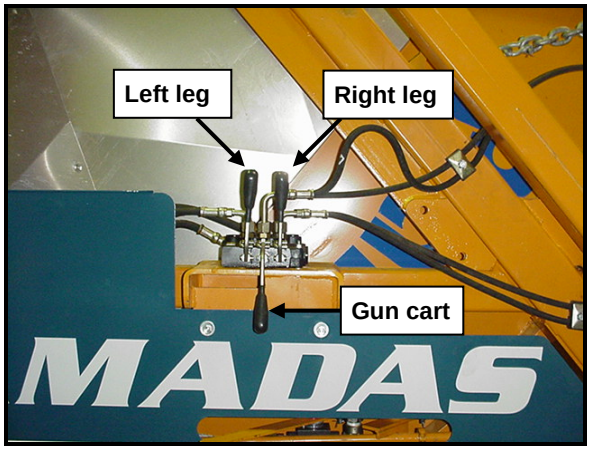
Hydraulic Stabilizer Legs and Turntable



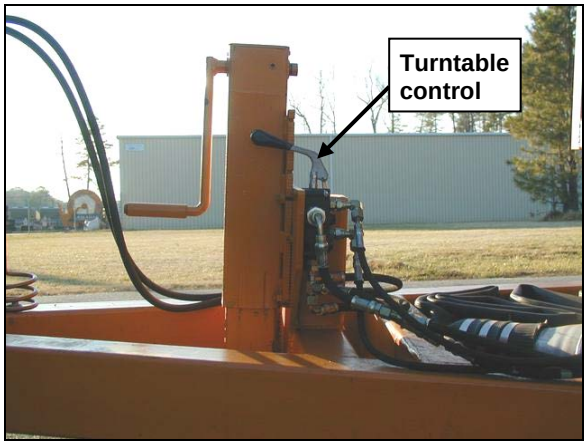
The hydraulic legs and turntable are operated using the tractor's hydraulics

The stabilizer legs function as follows:

- The three handles on the side of the irrigator control each leg and the gun cart.



- To raise and lower the right leg, raise or lower the right handle.
- To raise or lower the left leg, raise or lower the left handle.
- To raise or lower the gun cart, raise or lower the lower handle.
- To rotate the turntable, use the handle shown below.



CAUTION

Before using the hydraulic legs, remove the nut and bolt securing each hydraulic leg for shipping. Machine damage will result if an attempt is made to move the legs hydraulically with the shipping bolts still in place.

CAUTION

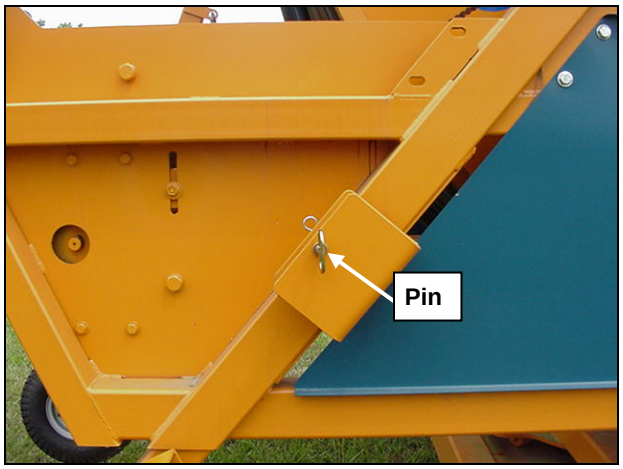
When lowering the stabilizer legs, do NOT overextend them to the point that the side of the irrigator is picked up. This will severely affect the stability of the Reel Rain and could result in serious injury or damage to the Reel Rain.

Throw Down Stabilizer Legs

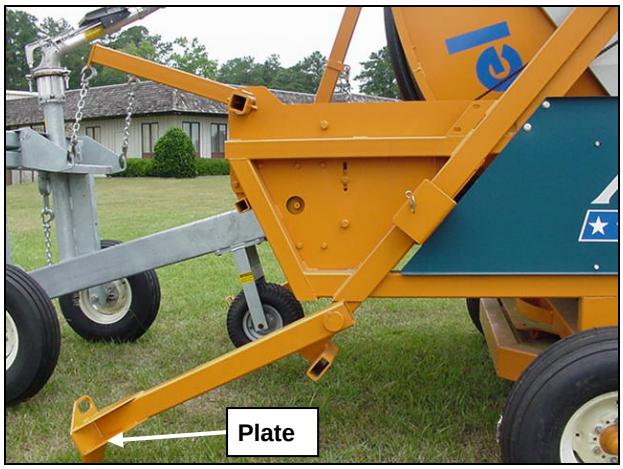
(Available only on the C1400 and C2000) The throw down stabilizer legs are used to provide stability for the Reel Rain while it is in use. Generally, this type of leg requires no adjustments.

To use the throw down stabilizer legs:

1. Remove the pin holding the leg.



2. “Throw” the leg down so that the plate at the end of the leg is embedded into the ground.



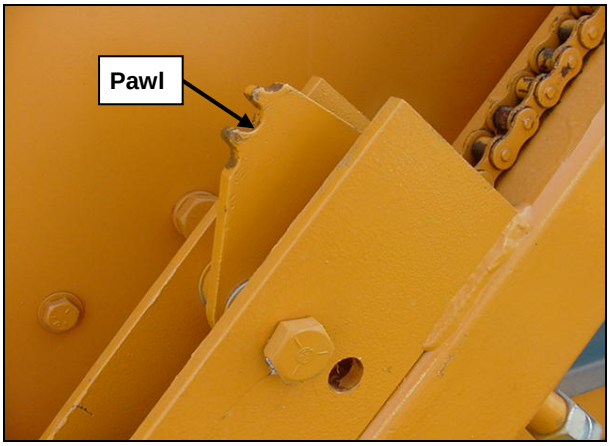
3. Raise the leg and re-insert the pin when the Reel Rain needs to be moved.

Crank Down Stabilizer Legs

The crank down stabilizer legs are used to provide stability for the Reel Rain while it is in use. These legs are operated with a crank mechanism.

To use the crank down legs:

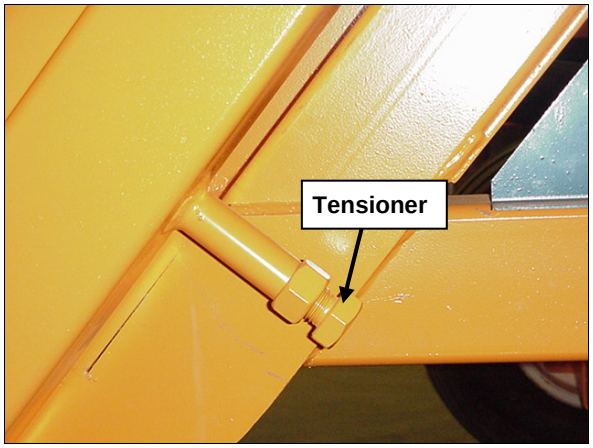
IMPORTANT! Each of the crank down legs has a pawl. When correctly engaged, the pawl prevents the leg from moving. Disengage the pawl by reversing its position before attempting to raise or lower a leg. When the leg is in position, make sure the pawl is engaged to prevent the leg from raising or dropping freely.



1. Crank each leg down until the plate at the end of the leg is embedded into the ground. Use the chain pawl to secure the chain and hold the leg.



2. Tighten the tensioner located on each leg as necessary to prevent the leg from free falling when not held by the pawl.



3. Reverse the chain pawl and use each crank in the reverse direction to bring the legs back up.

4. Reposition the pawl so the leg remains in position.

Gun Carts

Reel Rain gun carts are equipped with an adjustable nose wheel and variable width main wheels. The adjustable nose wheel allows the cart to be adjusted to roll straight so that the cart will follow behind the hose properly. The variable width main wheels allow the cart to be tailored to different field conditions.

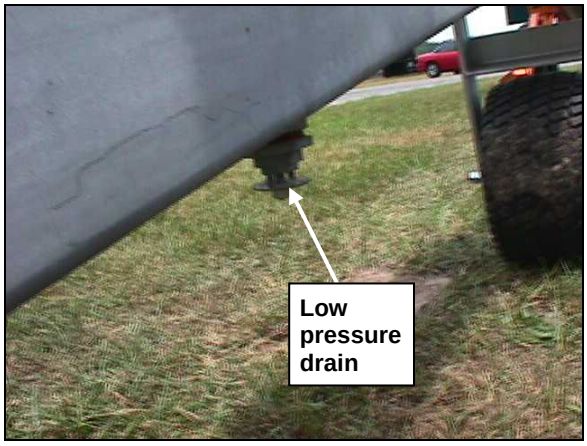
Generally, the gun cart should be adjusted so that the wheels are as wide apart as possible for stability. In addition, if the flow rate exceeds 300 GPM, fluid or weight must be added to the tires of the gun cart to add stability. Weight and width extension kits are available for the MH50 gun cart. In addition, an extension is also available to add height to the gun.

Drains

The low pressure drain will automatically drain water from the gun cart as needed. When you drain the hose, remove the rear drain cover to drain water from the gun cart.

⚠ CAUTION

Make sure water pressure is off of the machine before attempting to drain water out of the drain.

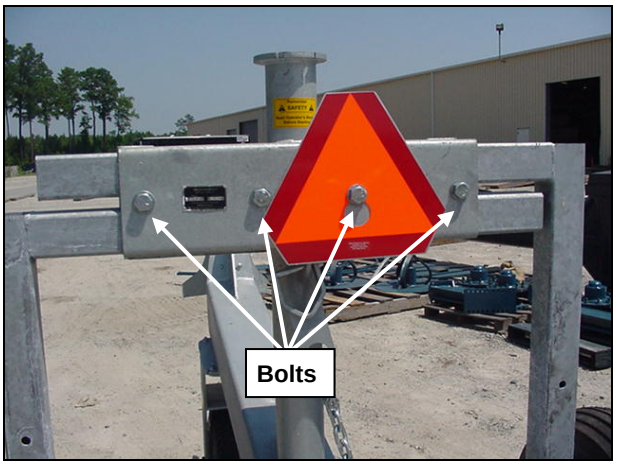




Main Wheels

Adjust the main wheels as follows:

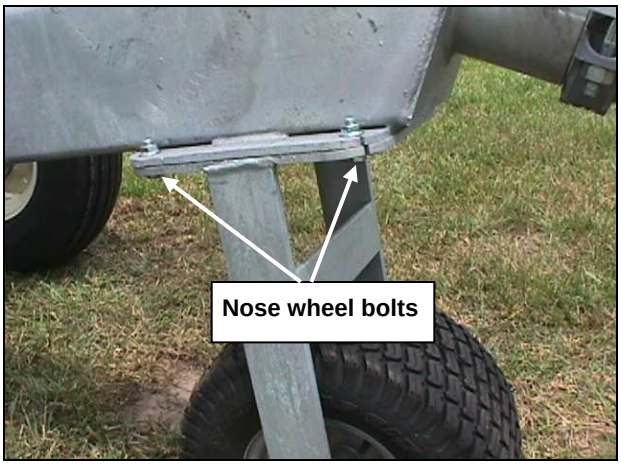
1. Remove bolts and slow moving vehicle sign.
2. Pull wheel arms out or push together to desired width.
3. Reinstall bolts and slow moving vehicle sign.



Nose Wheel

Adjust the nose wheel as follows:

1. Loosen the four bolts holding the nose wheel in place.
2. Twist the nose wheel slightly, opposite the direction the gun cart is running out of line.
3. Re-tighten the nose wheel bolts.
4. Test again.



Guns

Either the Nelson SR Big Gun or Komet Twin 202 is used with the Reel Rain. Both guns function similarly.

Gun nozzles and/or rings can be changed to vary the volume of water discharged at any given pressure. Larger nozzles or ring sizes have higher discharge rates than smaller nozzles or rings at the same pressure. Refer to the "Charts" section in Chapter 3, *Operation Overview*, for discharge rates of specific ring sizes.

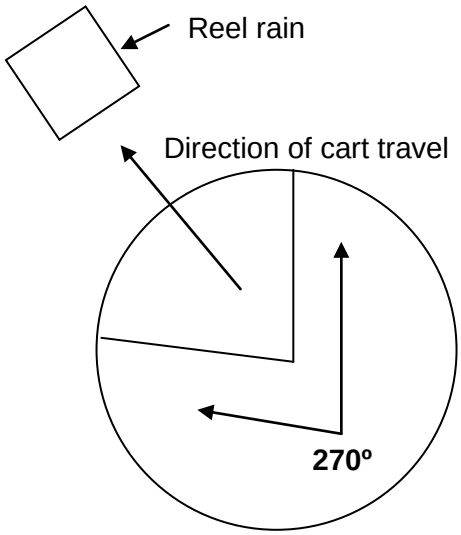
Stops on the gun are set to determine the arc that the gun turns to dispense water. Generally, we recommend you set the stops so that the gun turns in no more than a 270º arc behind the cart. This will eliminate water sprayed between the gun cart and Reel Rain. The smaller nozzle installed on the side of the gun will cover the area near the gun.



Nelson SR200 Big Gun



Komet Twin 202

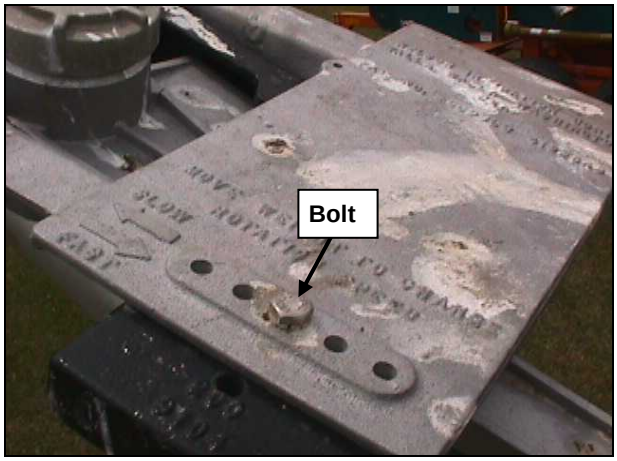


Gun Speed

The speed the gun rotates is adjusted by the placement of weight on the gun. This weight is located on the top of the gun cart.

To change the gun speed:

1. Loosen the bolt.
2. Move the weight in direction indicated by arrows to slow down or speed up the gun.
3. Tighten the bolt.



Nozzles

The photos show the same gun with two different types of nozzles.

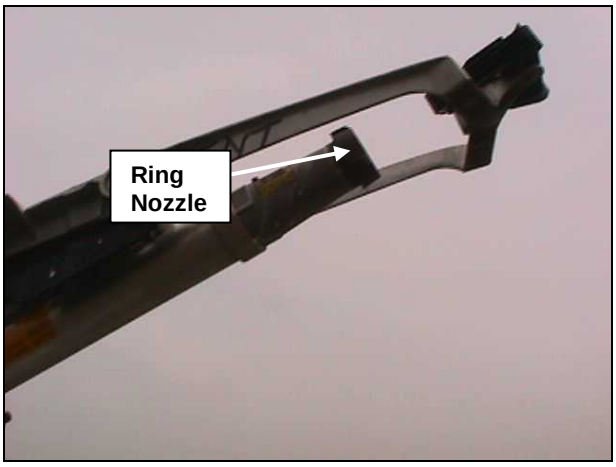
CAUTION

Make sure water pressure is off of the machine before changing a nozzle. Attempting to change a nozzle while the gun is under pressure could result in serious injury.



To change a taper bore nozzle:

1. Unscrew existing nozzle.
2. Using the charts in Chapter 3, *Operation Overview*, determine the proper size nozzle.
3. Screw on the desired nozzle and tighten.



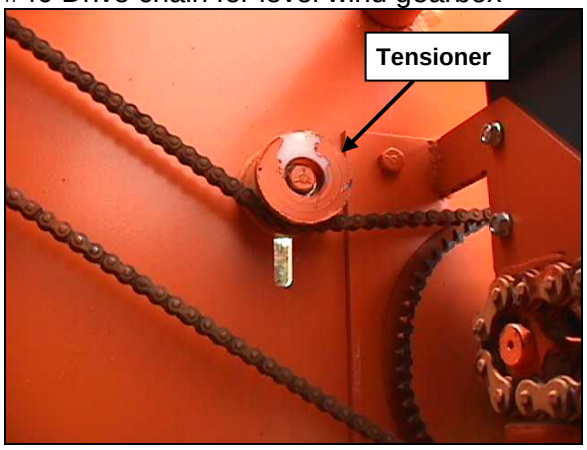
To change a ring nozzle:

1. Unscrew the ring holder on the end of the nozzle.
2. Using the charts in Chapter 3, *Operation Overview*, determine the proper size ring.
3. Place the desired ring in the ring holder and screw the ring holder onto the end of the nozzle.

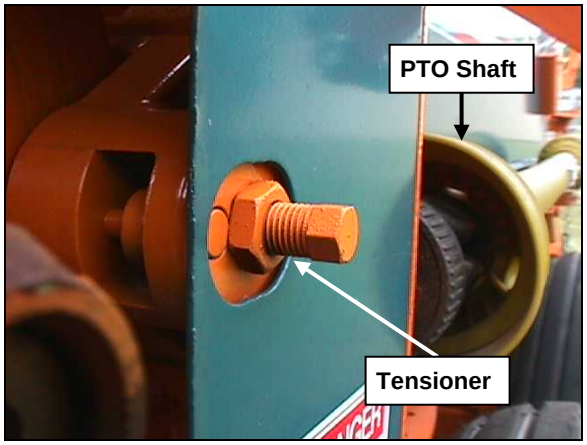
Tension Adjustments

The following photos show tension adjustments that can be made for the Reel Rain.

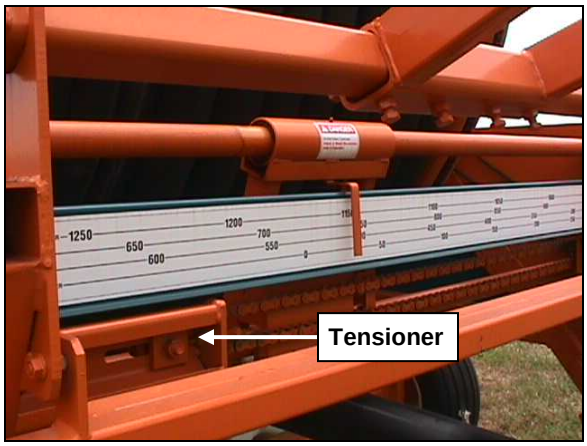
#40 Drive chain for level wind gearbox



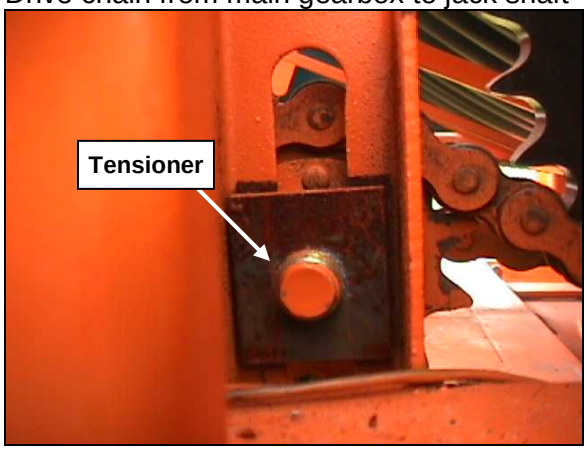
Transmission brake



#80 Traverse chain for level wind



Drive chain from main gearbox to jack shaft



NOTES

6. Maintenance

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Performing Maintenance

We strongly recommend that you perform regular maintenance on your Reel Rain irrigator to help ensure efficient and safe operation.

The following page contains the Lubrication Schedule we recommend you follow. Each item on the schedule is described in more detail in this chapter.

If you need to replace any machine parts, please contact your Amadas dealer.

Safety Decals

Be sure to follow all warnings indicated by the safety decals on this machine. An example of a safety decal is shown below.



CAUTION

Please follow safety recommendations when performing any maintenance on the Reel Rain.

- Do NOT make adjustments or attempt any maintenance while the machine is in operation.
- Always engage the machine's brake before attempting any maintenance or adjustments.
- Use the stabilizer legs when performing any maintenance. Make sure the Reel Rain is properly positioned.
- Do NOT perform any maintenance or repairs on the irrigator while it is under pressure. Always make sure the water source is shut off.
- Use care when handling hydraulic hoses and carefully read all warnings.

Lubrication Lubricate your Reel Rain according to the schedule below.	Each item on the schedule is described in more detail beginning on the next page.

Lubrication Schedule

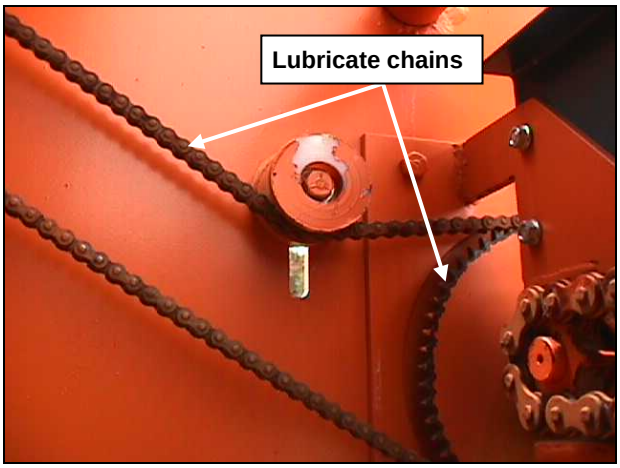
Location	Type of Lubricant	Daily	Every 2 Weeks	Monthly	Yearly
Chains (except drum)	30 weight oil			X	
Gearbox	Agra Grade 5				X
Grease fittings (5)	Multi-purpose grease			X	
Inlet spindle bearing	Multi-purpose grease			X	
PTO shaft (if used daily)	Multi-purpose grease		X		
Traverse Assembly	Multi-purpose grease		X		
Wheel bearings/Reel Rain	Wheel bearing grease				X
Wheel Bearings/Gun Cart	Wheel bearing grease	X			

Chains

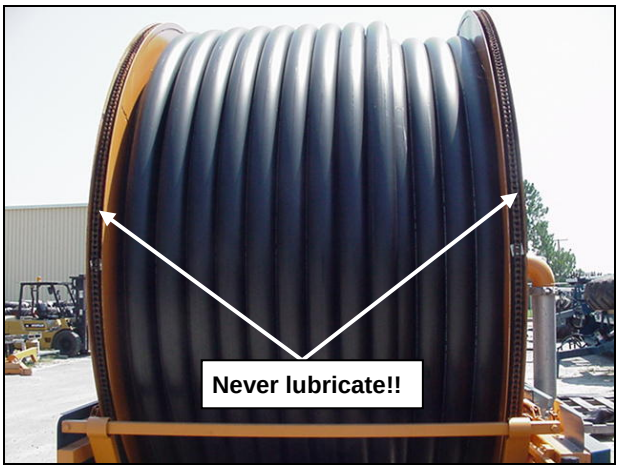
Lubricate

- 30 weight oil
- Monthly

Grease all chains with 30 weight oil monthly EXCEPT the drum drive chains.



IMPORTANT! Do NOT grease drum drive chains as chain slippage will result.



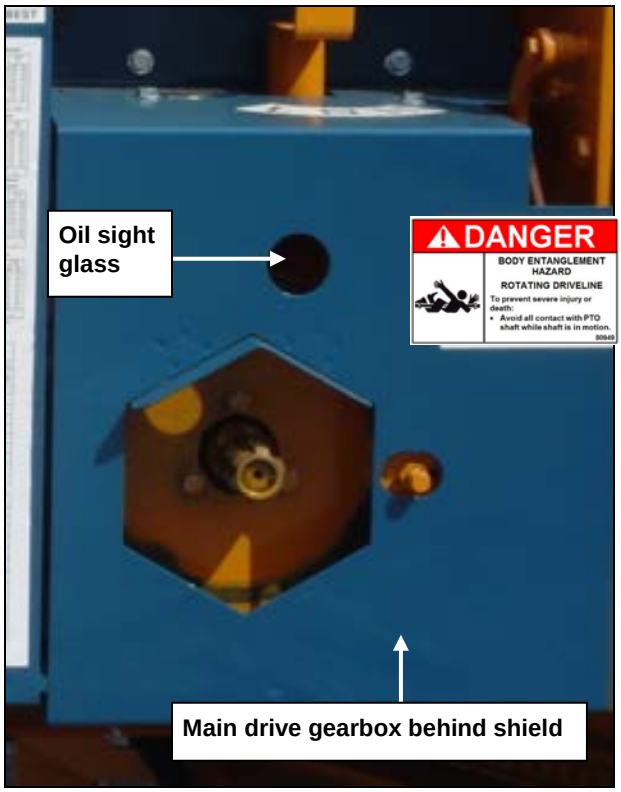
Gearbox

Lubricate

- Yearly
- Agra Grade 5

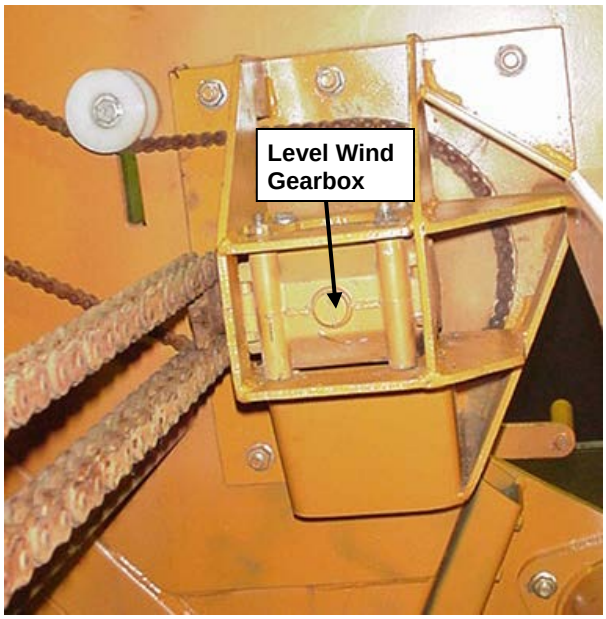
The following two gearboxes are located on the Reel Rain:

- Main drive gearbox, located behind the gear shifter. You will need to remove the shield to access this gearbox. The oil site gauge can be viewed through an opening in the shield so you can check the amount of oil in the gearbox without removing the shield.



- Level wind gearbox, located on the left hand side of the machine, if you are viewing the remaining hose indicator. Fill the gearbox just to the point of overflowing.



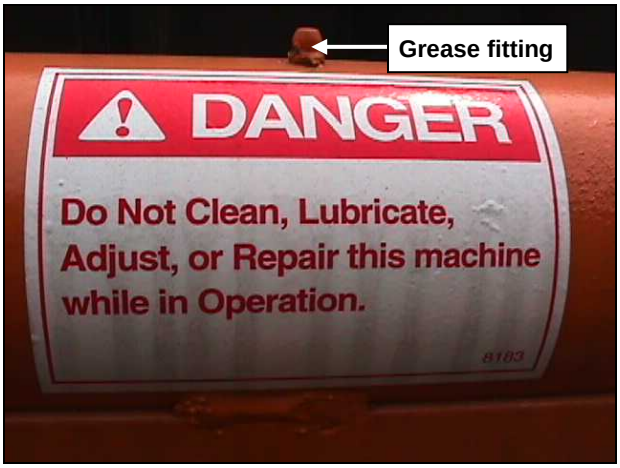


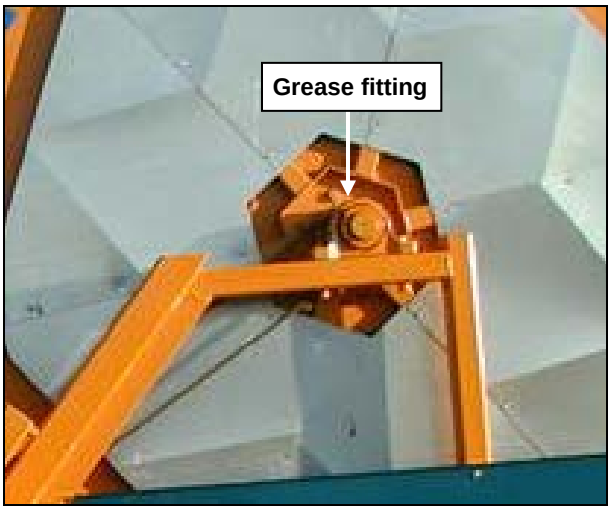
Grease Fittings

Lubricate

- Monthly
- Multi-purpose grease

Exception: Lubricate the grease fitting on the gun cart nose wheel daily.





Inlet Spindle Bearing

Lubricate

- Weekly
- Use multi-purpose grease

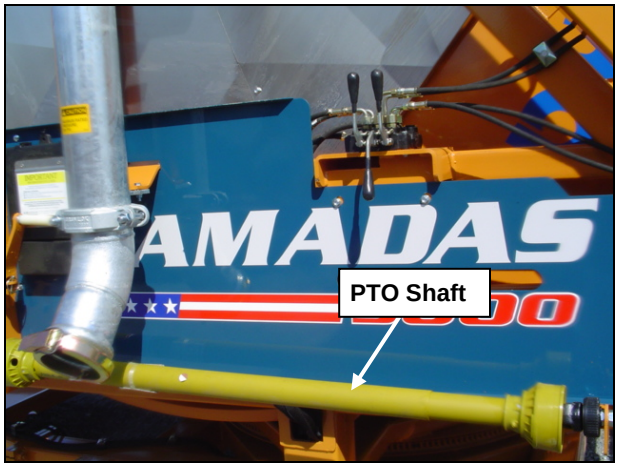
1. Using a screwdriver, pry the plastic bearing from the thrust washer.
2. Pack multi-purpose grease between the thrust washer and bearing.



PTO Shaft

Lubricate

- Daily
- Use multi-purpose grease





Tires

Maintain tire pressure:

- 90 PSI for both the C2000 and C3000
- 36 PSI for C1400

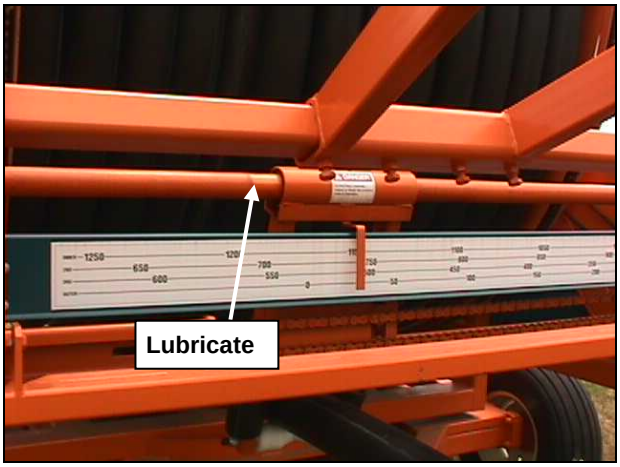


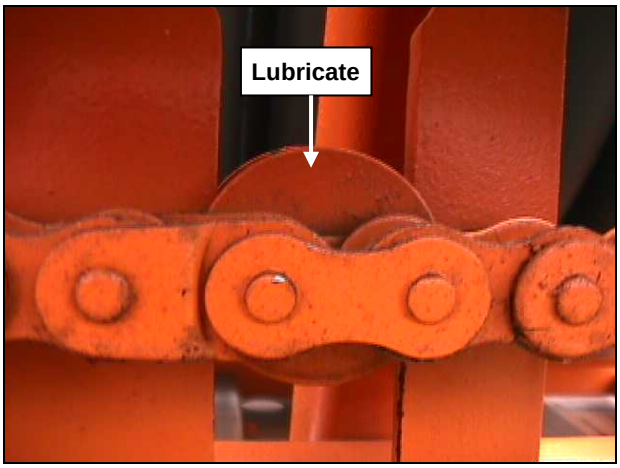
Traverse Assembly

Lubricate

- Every two weeks
- Use multi-purpose grease

1. Lubricate the chain slider assembly on the rear of the traverse frame.
2. Lubricate the grease point with multi-purpose grease.
3. Lubricate the surface of the slide rod.
4. Lubricate the boss.





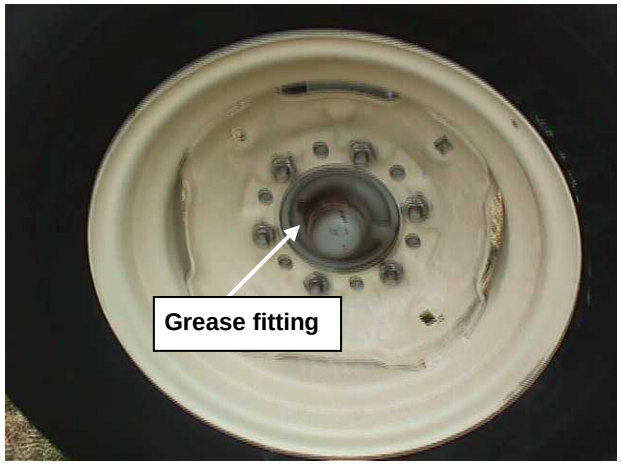
Wheel Bearings/Gun Cart

Lubricate

- Daily
- Wheel bearing grease

Pump wheel bearing grease into the gun cart wheel grease fittings before each use.





Wheel Bearings/Reel Rain

Lubricate

- Yearly
- Wheel bearing grease

Pull wheels and repack wheel bearings.



Preventative Maintenance

The checklist to the right lists general preventative maintenance that should be performed every six months. Routine general inspection and repair is necessary to increase the service life of the machine.

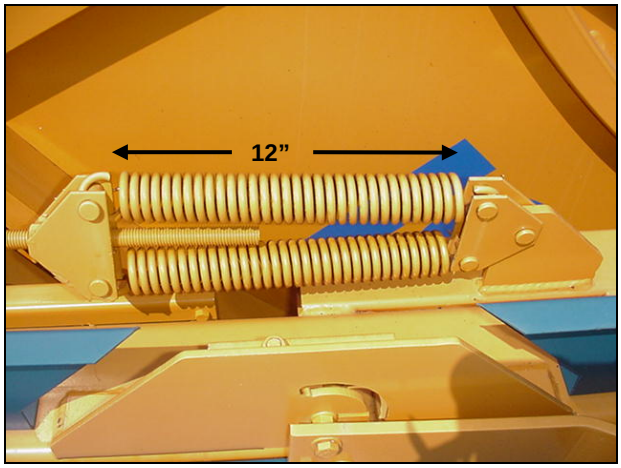
More detailed preventative maintenance is described beginning on the next page.

Preventative Maintenance Checklist

- √ Check the oil levels in all gearboxes. If necessary, fill the traverse box with non-foaming 90 weight oil. Fill the main gearbox with synthetic 90 weight gear lube.
- √ Inspect the frame for chipped paint or rust. Repaint if necessary.
- √ Check the condition of the tires. Replace if worn or damaged. Check the tire pressure and inflate to 90 PSI if necessary (36 PSI for the C1400).
- √ Check the wheel lug nut torque. It should be 125 ft/lbs (200ft/lbs for the C1400).
- √ Inspect the hose for cracks, damage, or loose connections. Repair or replace as necessary.
- √ Check the condition of all belts. Replace any damaged belts.

Drum Drive Chain

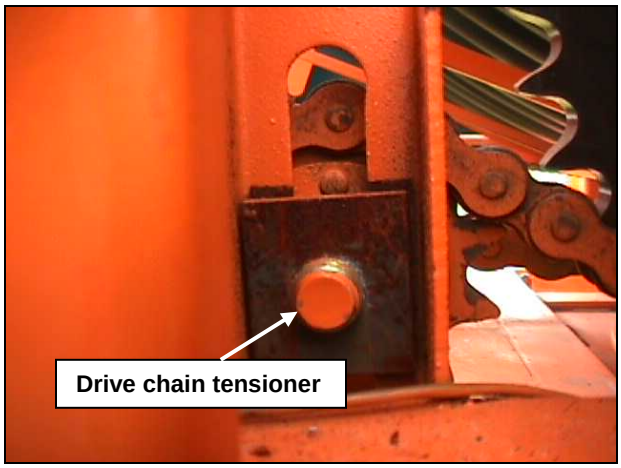
Measure the length of each drum drive chain tension spring on both sides of the drum reel. If the length of each spring from the first coil to the last coil is not 12 inches, turn the spring adjustment rods until the springs measure 12 inches.



Drive Chains

Adjust the tension in the drive chains behind the safety shield so that there is approximately ½ inch of sag.

1. Open the safety shield.
2. Loosen the bolt securing the idler.
3. Move the idlers until the tension is correct.
4. Re-tighten the idler bolts and close the shield.



Engine

If your Reel Rain is powered by a gas engine, refer to the maintenance section of the Engine Owner's Manual. Regular maintenance should be performed on the air cleaner and spark plugs.

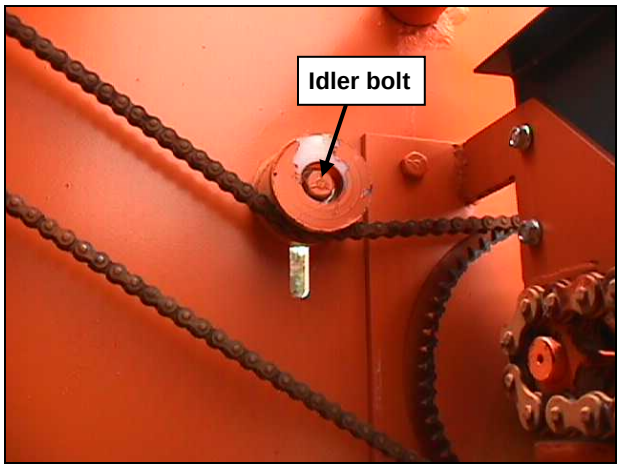
NOTE! It is very important that the oil be changed according to the instructions in the Engine Owner's Manual.



Level Wind Chain

Remove the excess slack in the level wind chain.

1. Loosen the bolt holding idler in place.
2. Push the idler toward the chain until all slack is gone.
3. Tighten the idler.



Plumbing Seals

Check for leakage around the side rotating seal where the inlet plumbing is connected. If water is leaking, replace the side rotating seal as follows:

NOTE! The seal will leak until the system's pressure is reached and then will drip slightly. Change the seal when the leak does not stop after the system pressure is reached.

1. Turn off the water flow to the irrigator.
2. Disconnect the infeed hose.
3. Unbolt and remove the inlet plumbing.
4. Remove the retaining ring, O-ring, and thrust washer from the inlet spindle.
5. Install the new O-ring, retaining ring, and thrust washer on the inlet spindle. Be certain that the thrust washer is greased thoroughly.

NOTE! The thrust washer, inlet spindle, and inlet plumbing should not have any rust on them. If necessary, clean these items. Rust will prevent the thrust washer from moving freely.

6. Replace the inlet plumping and bolt into place. The inlet plumping must be lined up with the inlet spindle to prevent any leaking.



Stabilizer Legs

1. Regular inspection and adjustment will keep the legs in good operating condition.

2. Inspect the legs for damage or missing parts.

3. Repair or replace as required.



Traverse Chain

Adjust so that the sag of the chain at the midpoint of the machine is less than ½ inch. You should be able to squeeze the two chains together in the midpoint when properly adjusted.

1. Loosen the nut on the back of the chain idler.

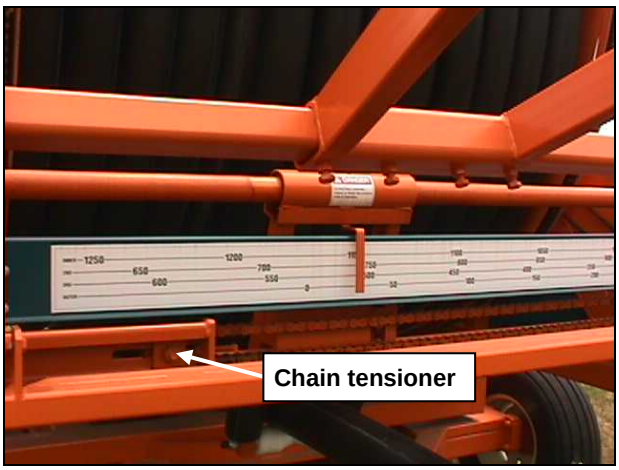
2. Loosen the lock nut on the adjusting screw.

3. Loosen the traverse chain idler sprocket bolt ½ turn.

4. Turn the adjusting screw until the tension is correct.

5. Re-tighten the idler sprocket bolt

6. Re-tighten all lock nuts.



Off Season Storage Review the off season storage checklist below.	The items on this list should be followed *each time* the irrigator is put away for storage.

Off Season Storage Checklist

√ Tow the hose out to the full length.

√ Leave at least 1 coil of hose on the drum reel to prevent pulling the hose off of the reel. It is difficult to replace the hose once it has been pulled off.

√ Remove the drain fitting from the rear of the gun cart.

√ Rewind the hose slowly with the tractor PTO. This will allow the water to drain from the irrigator and prevent freeze damage to the Reel Rain. The hose may become slightly oval in shape when the water drains out and may not rewind properly on the drum reel. Avoid cross layering the hose, which can break the traverse cradle or damage the hose. If necessary, use a wooden post to pry the hose and force it in place.

√ On the turbine powered machines, open the butterfly valve, gate valve, and the drain plug or petcock on the turbine.

√ On gas engine powered machines, drain all fuel from the tank and carburetor.

√ Grease all fittings.

√ Touch up any scratched or chipped paint on the irrigator and repaint any rusted areas.

√ Cover the inlet and gun to prevent the entrance of dirt or animals. Replace the drain plug.

√ Store the irrigator in a clean and dry place.

√ If the Reel Rain will be left outside, cover the entire machine with waterproof tarp.

Troubleshooting

Problem	Cause	Correction
Engine will not start.	Engine is not set up properly (out of gas, low oil, fouled spark plug, etc.)	Refer to the *Engine Owner's Manual*.
	Gas or water is in the crankcase.	Change the oil. Clean the carburetor and bowl. Drain the water from the fuel tank. Replace with clean fuel.
Engine will not start or the transmission will not go into high or low range.	Automatic cut off bar is not pulled toward the gun cart.	Pull the bar out.
	Automatic cut off switch is broken or out of adjustment	Replace or adjust as required.
Turbine does not work.	Water flow is too low.	Check and increase water flow by increasing water pressure or increasing gun nozzle size.
	Automatic cut off bar is not pulled toward the gun cart.	Pull the bar out.
	Automatic cut off linkage is broken.	Repair linkage.
	Defective butterfly valve.	Replace.
	Butterfly valve is open.	Close valve.
Irregular or uneven irrigation pattern.	Wind is shifting.	Adjust irrigating pattern for windage.
	Lane spacing is incorrect.	Check and adjust the lane spacing.
	Speed of gun cart is changing.	Adjust the speed compensator.
	Water pressure is unsteady.	Check and adjust the pump. Inspect the pump and lines for leaks.

Problem	Cause	Correction
Hose does not rewind, or rewinds improperly.	Stabilizer legs are not down and the chassis is moving.	Reset the stabilizer legs.
	Machine and hose are at an angle.	Align the machine with the hose.
	Obstructions are blocking or dragging on the gun cart.	Remove any obstructions.
	Level wind timing is out of adjustment.	Adjust the level wind timing. Refer to Chapter 5, *Adjustments*.
	Traverse cradle is broken or damaged.	Check and replace. After replacing, re-time according to Chapter 5, *Adjustments*.
	Turbine operation is erratic.	Check and adjust the drive range (high or low) settings. If necessary, change the impeller or increase water flow.
	Gun cart has fallen over.	Check the gun cart. Add weight if necessary, or extend the width between the two tires.
	Gun cart is not tracking straight.	Adjust the nose wheel steering. Refer to Chapter 2, **Preparation**.
	Broken or slipping belts.	Check and replace or tighten.
	Drum chains are slipping.	Remove the oil from the chain and in the chain track.
		Adjust drum chains to proper tension: 12” from end coil to end coil.

NOTES

LIMITED WARRANTY
FOR NEW AMADAS INDUSTRIES REEL RAIN HARD HOSE TRAVELER IRRIGATION SYSTEMS

A. GENERAL PROVISIONS

The warranty described below is provided by AMADAS INDUSTRIES ("AMADAS"), through its authorized dealers, to the original purchaser of each NEW AMADAS Reel Rain Traveler Irrigation System ("Reel Rain Traveler"). An authorized AMADAS dealer will repair or replace, at AMADAS's option, any parts covered under warranty which are found to be defective in material and/or workmanship during the applicable period of the warranty.

B. WHAT IS WARRANTED?

All parts of any NEW AMADAS Reel Rain Traveler, with the exception of the hard hose and normal wear items, are warranted for 3 years (1 year if used primarily for manure, wastewater, or industrial applications). This warranty shall not apply to any engines, tires, tubes, batteries, electrical components, or other products, which are or may be warranted separately by the manufacturer thereof. The warranty period will begin when the Reel Rain Traveler is delivered to the purchaser. Hard Hoses carry a five(5) year pro-rated warranty on ALL NEW machines. Hard hoses are pro-rated as follows:

1st year—100%, 2nd year—80%, 3rd year—60%, 4th year — 40%, 5th year — 20%

This warranty covers defective materials and workmanship. It does not cover maintenance, normal wear, misuse, lack of proper protection during storage, accidents or abuse. The purchaser shall pay all costs of routine maintenance and/or replacement of normal maintenance and wear items. Contact your dealer for specific information as to what constitutes normal wear, misuse, or abuse.

Used equipment is not warranted by AMADAS unless specifically covered by a separate warranty document.

C. UNAPPROVED SERVICE OR MODIFICATION

All obligations of AMADAS under this warranty are terminated if the Reel Rain Traveler is modified or altered in ways not approved by AMADAS.

D. SECURING WARRANTY SERVICE

To secure warranty service the purchaser must (1) Contact an authorized AMADAS dealer promptly on any claim for warranty service, report the product defect, and request repair within the applicable warranty period (2) Present evidence of the date of delivery of the Reel Rain Traveler and (3) Deliver the machine to an authorized AMADAS dealer within a reasonable period of time, at the purchasers expense, during normal working hours, for any needed warranty service.

E. NO DEALER WARRANTY

The selling dealer makes no warranty of his own on any items warranted by AMADAS, and makes no warranty on other items. The dealer has no authority to make any representation or promise on behalf of AMADAS, or modify the terms or limitations of this warranty in any way.

F. WHAT ARE THE PURCHASERS RESPONSIBILITIES?

A. Sign the AMADAS machinery delivery form, which will be given to you by the dealer.

B. Read the Operators manual before operating the equipment and make sure that all potential operators of the machine have been trained in its safe and proper usage.

C. Perform all required maintenance as recommended in the operator's manual.

G. DISCLAIMER

There are no warranties that extend beyond the description here. **ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE ARE SPECIFICALLY DISCLAIMED AS ARE ALL OTHER REPRESENTATIONS TO THE PURCHASER.** AMADAS specifically excludes any liability on behalf of the company for any incidental or consequential damages including, but not limited to, crop loss, loss of profits, rental of substitute equipment, or other commercial losses. AMADAS shall not be responsible for expenses or inconveniences that the purchaser may incur or experience with respect to the AMADAS Reel Rain Traveler Irrigation unit, nor shall AMADAS be liable for defect, damage, or failure caused by improper storage, unreasonable use, abuse, or accident, including the failure to provide reasonable and specified maintenance. This warranty applies only to the original purchaser of the equipment. Because some states do not allow the exclusion of limitation of incidental or consequential damages, the above limitation may not apply to you. This warranty gives you specific legal rights. You may also have other rights, which vary from state to state. Where there is a conflict between a provision of this warranty and the provision of any state, the state legislation prevails.

AMADAS

Revised: 4/99